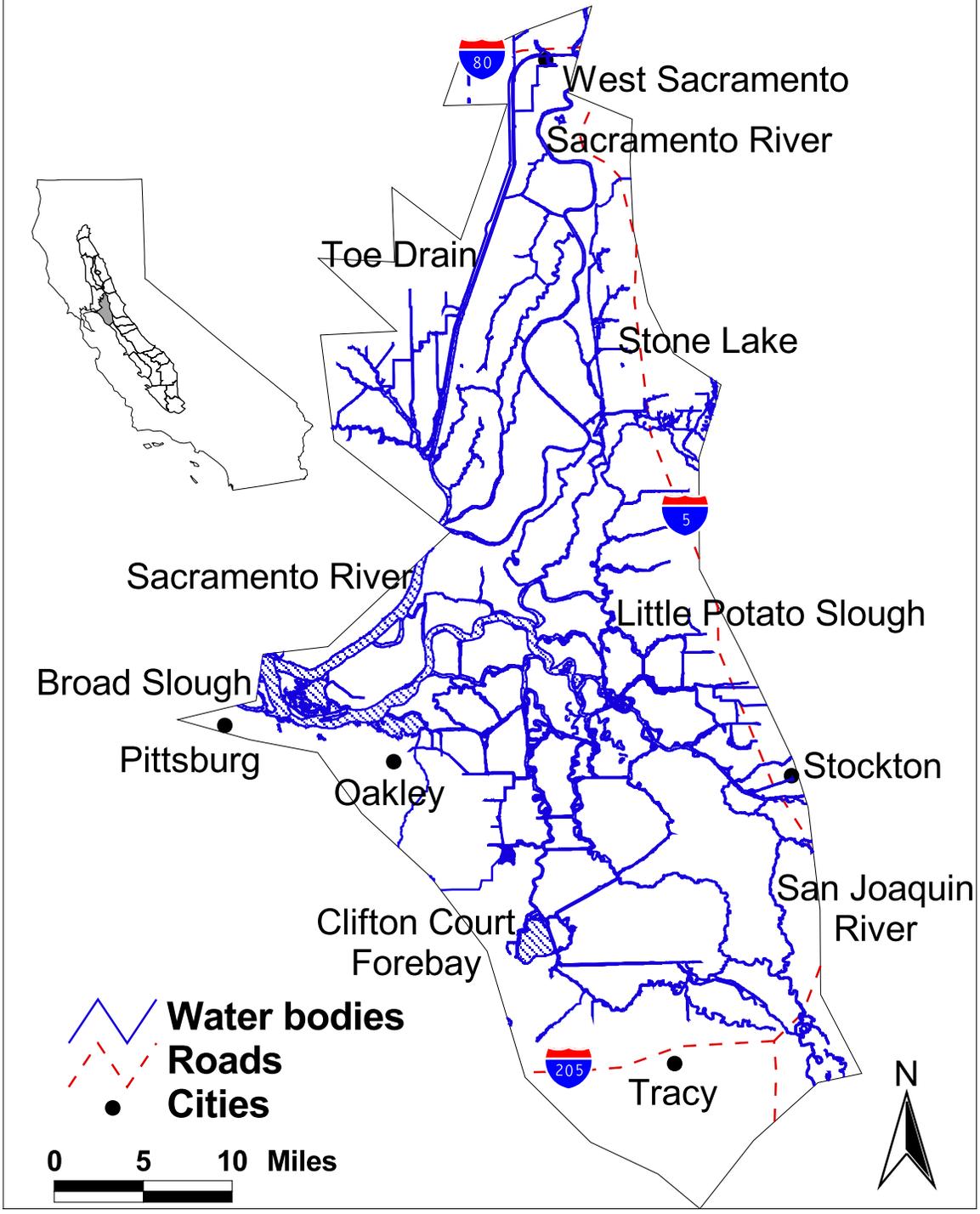
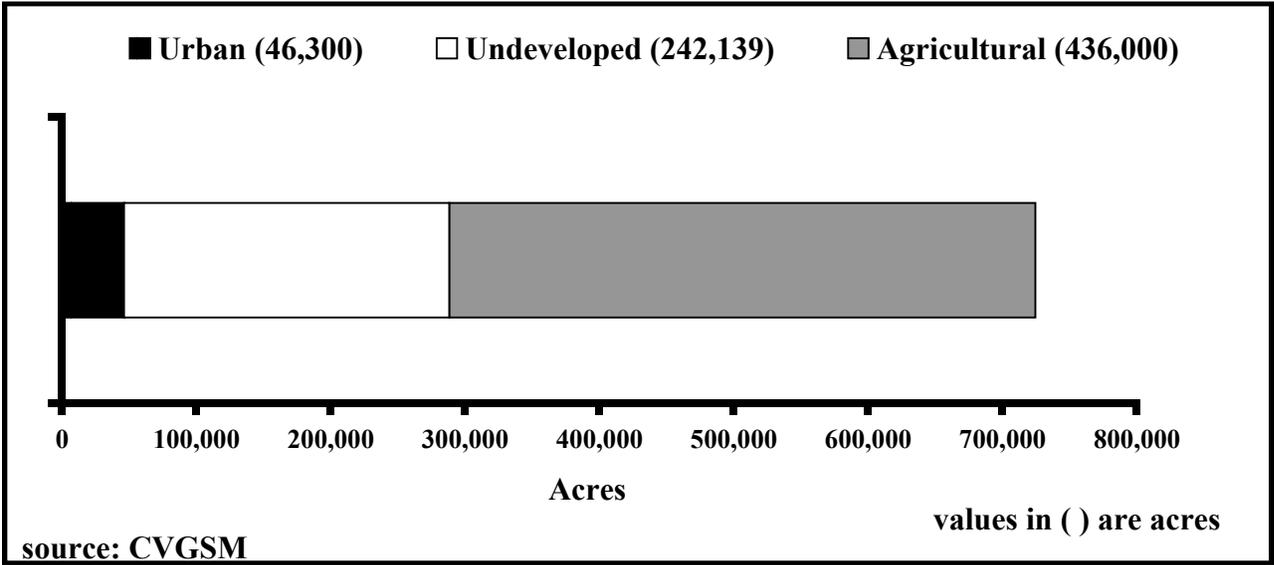




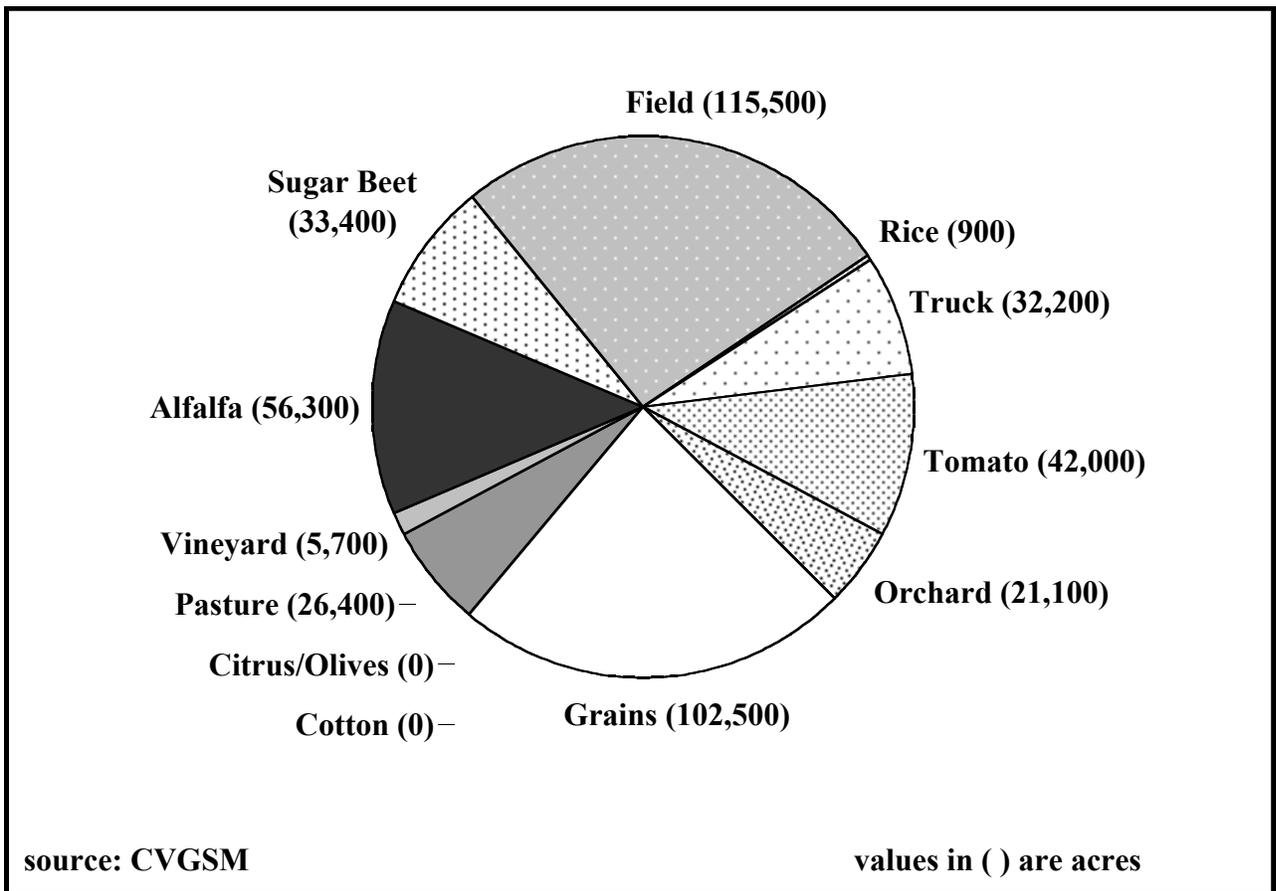
# Sub-Region 9, Sacramento - San Joaquin Delta



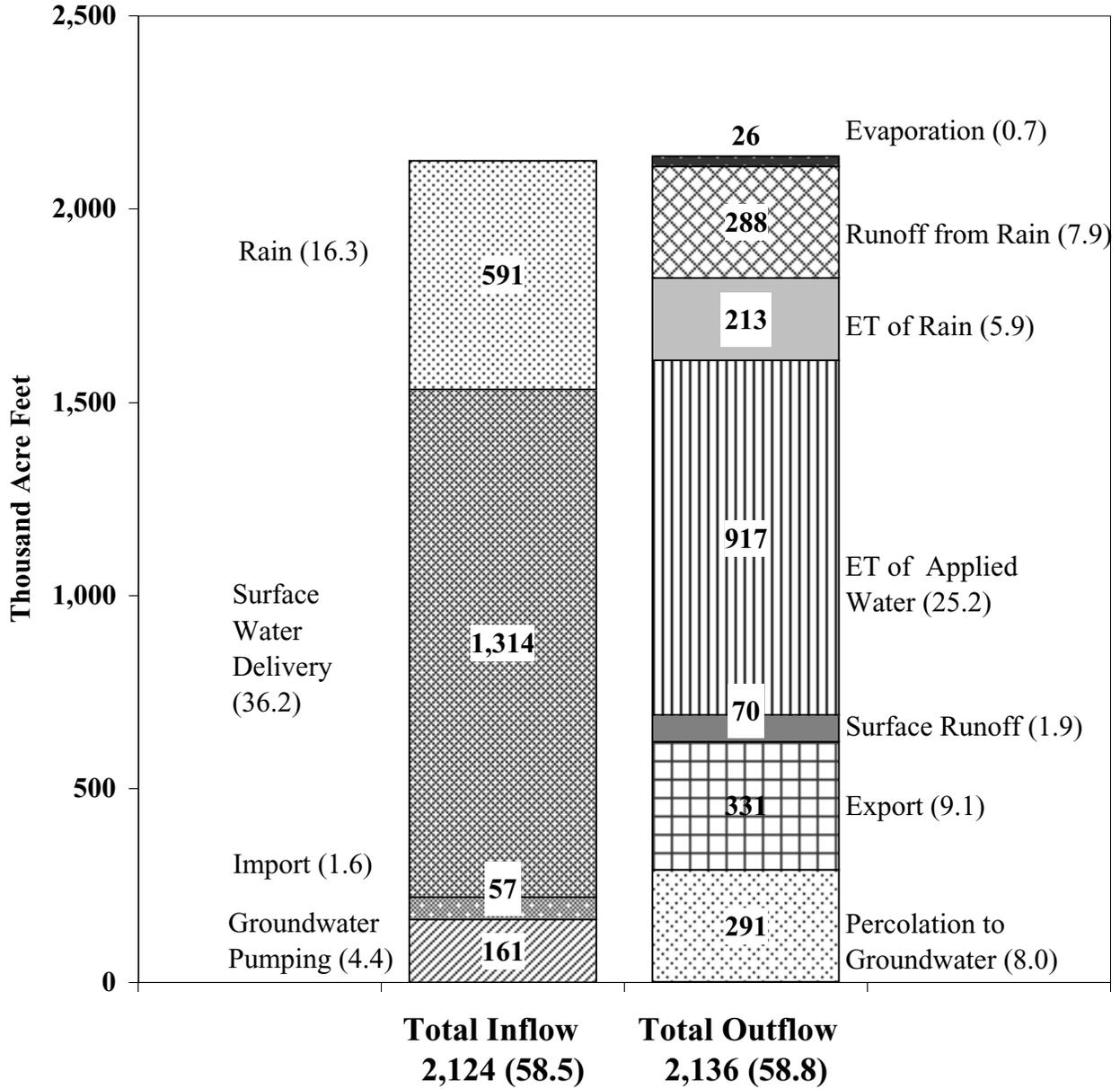
**Figure A.9.2 Land Use, Sub-Region 9,  
Sacramento - San Joaquin Delta.**



**Figure A.9.3 Cropping Pattern, Sub-Region 9,  
Sacramento - San Joaquin Delta.**



### Sub-Region 9 Water Balance



**Farm Water Balance, Average Year, Sub-Region 9, Sacramento - San Joaquin Delta. Values are Thousand Acre-Feet, with inches per acre shown in (.). All data is from the Central Valley Ground and Surface Water Model (CVGSM).**

**Table A.9.1. Descriptive List of Targeted Benefits, Sub-Region 9,  
Sacramento-San Joaquin Delta**

<b>TB # (1) [duplicate]</b>	<b>Location (2)</b>	<b>Category of Targeted Benefit (3)</b>	<b>Bene- ficiary (4)</b>	<b>General Time- Frame (5)</b>	<b>Conceptual Completeness (6)</b>
74	Delta	Flow: Provide flow to improve aquatic ecosystem conditions	Eco	Spring - summer	Undefined
75 [6, 13, 20, 30, 57]	Sacramento River below Keswick	Flow: Provide flow to improve aquatic ecosystem conditions	Eco	Fall - spring	Undefined
76	Western Delta	Flow: Provide flow to improve aquatic ecosystem conditions	Eco	Spring - fall	Incomplete
77	Delta	Quality: Reduce group A pesticides to enhance and maintain beneficial uses of water	Eco or M&I	TBD	Complete
78	Delta	Quality: Reduce native constituents to enhance and maintain beneficial uses of water	M&I	Irrigation season	Complete
79 [98]	San Joaquin River	Quality: Reduce native constituents to enhance and maintain beneficial uses of water	Eco or M&I	TBD	Complete
80	Delta	Quality: Reduce pesticides to enhance and maintain beneficial uses of water	Eco or M&I	TBD	Complete
81	Delta	Quality: Reduce nutrients to enhance and maintain beneficial uses of water	Eco or M&I	TBD	Complete
82 [101, 120, 137, 152]	San Joaquin River	Quality: Reduce pesticides to enhance and maintain beneficial uses of water	Eco or M&I	TBD	Complete
162	Five Mile Slough	Quality: Reduce pesticides to enhance and maintain beneficial uses of water	Eco or M&I	TBD	Complete
84	Delta	Quality: Reduce salinity to enhance and maintain beneficial uses of water	Eco, Ag or M&I	TBD	Complete
85	Sacramento River	Quality: Reduce pesticides to enhance and maintain beneficial uses of water	Eco or M&I	TBD	Complete
86	Delta	Quality: Reduce temperatures to enhance and maintain aquatic species populations	Eco	Fall and Spring	Undefined
87	All affected lands	Quantity: Decrease flows to salt sinks to increase the water supply for beneficial uses	Eco, Ag or M&I	Irrigation season	Complete
88	All affected lands	Quantity: Decrease nonproductive ET to increase water supply for beneficial uses	Eco, Ag or M&I	Year round	Complete
89	Wetlands	Quantity: Provide long-term diversion flexibility to increase the water supply for beneficial uses	Eco	Variable (mostly winter)	Incomplete
90	Salt affected soils	Quantity: Provide long-term diversion flexibility to increase the water supply for beneficial uses	Ag	Irrigation season	Complete
91	All suitable lands	Quantity: Provide short-term diversion flexibility to make water available to the Environmental Water Acct.	Eco, Ag or M&I	Irrigation season	Undefined

**Table A.9.2. Quantified Targeted Benefits, Sub-Region 9,  
Sacramento-San Joaquin Delta**

<b>TB # (1) [duplicate]</b>	<b>Source and Description of Quantified Targeted Benefit (7)</b>
74	ERPP: Provide a March outflow that occurs from the natural Sac River late-winter and early-spring peak: at least 20,000 cfs for 10 days (dry years), 30,000 cfs for 10 days (below-normal years), and 40,000 cfs (above normal years). Provide late-April to early May outflow that emulates spring inflow from the SJ River: at least 20,000 cfs for 10 days (dry years), 30,000 cfs (below normal years), and 40,000 cfs (above normal years) etc..
75 [6, 13, 20, 30, 57]	ERPP: More closely emulate seasonal streamflow patterns in dry and normal year- types by allowing a late-winter or early-spring flow event of approximately 8,000 to 10,000 cfs in dry years and 15,000 to 20,000 cfs in below normal water-years to occur below Keswick Dam; Maintain base flows of 6,000 to 8,000 cfs during fall.
76	Core: In order to increase the survival of resident Delta species, manage Delta inflow and outflow to maintain prime habitat in the Western Delta in spring, summer, and fall.
77	303(d): Reduce _____ [Group A pesticide] and DDT to _____.
78	Core: Reduce total organic carbon (TOC) to less than 3 mg/ L to allow municipal treatment flexibility.
79 [98]	303(d): Reduce selenium concentration to 5 ug/L and boron concentration to 2 mg/L from March 15 to September 15 and to 2.6 mg/L September 16 to March 14.
80	303(d): Reduce chlorpyrifos and diazinon to _____.
81	ERPP: Reduce nutrient level to less than _____ (mg/L) to allow municipal treatment facilities the flexibility to meet the potential long-term regulatory scenario. RWQCB: The dissolved oxygen concentration shall not be reduced below 7.0 mg/L in the Sac. River etc
82 [101, 120, 137, 152]	303(d): Reduce chlorpyrifos and diazinon to _____.
162	303(d): Reduce diazinon to _____.
84	303(d): Reduce salinity to _____.
15 [23, 31]	303(d): Reduce diazinon to _____.
86	ERPP: More frequently maintain daily water temperatures in the Delta channels below 60°F in spring and 65°F in fall to meet the temperature needs of salmon and steelhead migrating through or rearing in the Delta.
87	Core: Reduce existing flows to salt sinks by _____ acre-feet per year.
88	Core: Reduce unwanted ET by _____ acre-feet per year.
89	ERPP: Delta-Cooperatively manage 40,000 to 75,000 acres of agricultural lands. Core: Central Valley Habitat Joint Venture Implementation Plan restoration objective (April 19, 1990): restoration of 17,345 acres of seasonal, semipermanent, and permanent wetlands.
90	Core: While remaining within the salinity threshold for a given crop, take advantage of periodic opportunities to reduce salinity impacts by increasing leaching by _____ during periods of excess supply and by reducing by _____ leaching during water short periods.
91	Core: Support the operation of the Environmental Water Account by temporarily reducing diversion by _____ to take advantage of excess and unexpected Delta export capacity.

**Table A.9.3. Quantified Targeted Benefit Change, Sub-Region 9,  
Sacramento-San Joaquin Delta**

TB # (1) [duplicate]	Reference Condition		Quantified TB		Quantified Targeted Benefit Change			Specific Time-Frame (11)
	Data Source (8)	Availability (9)	Data Source (8)	Data Availability (9)	Data Source (8)	Availability (9)	Range of Values (10)	
74	CVGSM	Unproven-precise	ERPP	Rough estimate	Calculated	Rough estimate	TBD	late April/May 10 day event dry season
75 [6, 13, 20, 30, 57]	CVGSM	Unproven-precise	ERPP	Rough estimate	Calculated	Rough estimate	44 - 180 TAF/yr	Year round Fall
76	CVGSM	Unproven-precise	ERPP	Not available	Not available	Not available	Not available	Spring, summer, fall
77	TBD	TBD	TBD	Proven - precise	Calculated	TBD	TBD	TBD
78	TBD	TBD	Core	Proven - precise	Calculated	TBD	TBD	Irrigation season
79 [98]	RWQCB	Proven - precise	RWQCB	Proven - precise	Calculated	Proven - precise	TBD	TBD
80	RWQCB	Proven - precise	RWQCB	Proven - precise	Calculated	Proven - precise	TBD	TBD
81	TBD	TBD	TBD	Proven - precise	Calculated	TBD	TBD	TBD
82 [101, 120, 137, 152]	TBD	TBD	TBD	Proven - precise	Calculated	TBD	TBD	TBD
162	TBD	TBD	TBD	Proven - precise	Calculated	TBD	TBD	TBD
84	TBD	TBD	TBD	Proven - precise	Calculated	TBD	TBD	TBD
15 [23, 31]	TBD	TBD	TBD	Proven - precise	Calculated	TBD	TBD	TBD
86	TBD	TBD	ERPP	Unproven - precise	Calculated	TBD	TBD	Fall and Spring
87	CVGSM	Unproven-precise	Core	Rough estimate	Calculated	Rough estimate	TBD	Year round
88	CVGSM	Unproven-precise	Core	Rough estimate	Calculated	Rough estimate	6.6 TAF/yr	TBD
89	CVHJVIP	Insufficient	CVHJVIP	Unproven - precise	Not available	Insufficient	5 TAF/yr	Not available
90	Core	Rough estimate	Core	Rough estimate	Calculated	Rough estimate	TBD	Irrigation season
91	TBD	TBD	Not available	Not available	Not available	Not available	Not available	Not available

**Table A.9.4. Quantifiable Objective, Sub-Region 9,  
Sacramento-San Joaquin Delta**

<b>TB # (1) [duplicate]</b>	<b>Achievable Agricultural Potential (12)</b>	<b>Quantifiable Objective (13)</b>
74	TBD	TBD
75 [6, 13, 20, 30, 57]	1,044 - 1,897 TAF per year	44 - 180 TAF per year
76	TBD	TBD
77	TBD	TBD
78	TBD	TBD
79 [98]	TBD	TBD
80	TBD	TBD
81	TBD	TBD
82 [101, 120, 137, 152]	TBD	TBD
162	TBD	TBD
84	TBD	TBD
85	TBD	TBD
86	TBD	TBD
87	TBD	TBD
88	6.6 TAF per year plus additional water generated through reduction in application through improved irrigation systems	6.6 TAF per year plus additional water generated through reduction in application through improved irrigation systems
89	5 TAF per year	5 TAF per year
90	TBD	TBD
91	TBD	TBD

**Table A.9.5. Affected Flow Paths and Possible Actions, Sub-Region 9,  
Sacramento-San Joaquin Delta**

<b>TB # (1) [duplicate]</b>	<b>Affected Flow Paths (14)</b>	<b>Possible Actions (provided as examples; proposers are encouraged to consider local actions that are not listed) (15)</b>
74	TBD	TBD
75 [6, 13, 20, 30, 57]	Surface and Groundwater Return	Improve farm irrigation management (such as irrigation scheduling) and more uniform irrigation methods (such as shorter furrows, sprinkler, or drip).
76	TBD	TBD
77	TBD	TBD
78	Surface and Groundwater Return	Improve farm irrigation management (such as irrigation scheduling) and more uniform irrigation methods (such as shorter furrows, sprinkler, or drip).
79 [98]	Surface and Groundwater Return	Improve farm irrigation management (such as irrigation scheduling) and more uniform irrigation methods (such as shorter furrows, sprinkler, or drip).
80	Surface and Groundwater Return	cover crop, furrow or field diking and reduction in late season irrigation. Note: significant contributions to this TB can also be made through changes in chemical applications that are outside the scope of AgWUE.
81	Surface and Groundwater Return	cover crop, furrow or field diking and reduction in late season irrigation. Note: significant contributions to this TB can also be made through changes in chemical applications that are outside the scope of AgWUE.
82 [101, 120, 137, 152]	Surface and Groundwater Return	cover crop, furrow or field diking and reduction in late season irrigation. Note: significant contributions to this TB can also be made through changes in chemical applications that are outside the scope of AgWUE.
162		
84	Surface and Groundwater Return	Improve farm irrigation management (such as irrigation scheduling) and more uniform irrigation methods (such as shorter furrows, sprinkler, or drip).
85	Surface and Groundwater Return	cover crop, furrow or field diking and reduction in late season irrigation. Note: significant contributions to this TB can also be made through changes in chemical applications that are outside the scope of AgWUE.
86	TBD	TBD
87	TBD	TBD
88	ETAW	Reduce ET flows using improved irrigation methods, such as drip irrigation, and planting densities.
89	Surface and Groundwater Return	Improve farm irrigation management (such as irrigation scheduling) and more uniform irrigation methods (such as shorter furrows, sprinkler, or drip). Reduction in operational spill through improved management, canal automation or regulatory storage. Reduction in canal seepage through canal lining or piping.
90	TBD	TBD
91	TBD	TBD

## Detail 75, Flow/Timing Sacramento River

### Step 1. Quantified Targets

#### A. Flow Target for Sacramento River

source: CVGSM		Thousand Acre Feet											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	---	---	179.0	179.0	179.0	---	---	---	---	138.0	138.0	138.0	951.0
2) Dry	---	---	179.0	179.0	179.0	---	---	---	---	138.0	138.0	138.0	951.0
3) B Norm	---	---	179.0	346.0	346.0	---	---	---	---	138.0	138.0	138.0	1285.0
4) A Norm	---	---	---	---	---	---	---	---	---	---	---	---	---
5) Wet	---	---	---	---	---	---	---	---	---	---	---	---	---
Wtd Avg.	---	---	---	---	---	---	---	---	---	---	---	---	---

### Step 2. Reference Condition

#### A. Sacramento River Flows

source: CVGSM		Thousand Acre Feet											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	295.6	307.7	394.9	435.1	422.2	399.0	437.5	393.8	263.1	258.4	277.9	282.8	4167.9
2) Dry	312.4	412.4	374.1	390.8	447.9	455.5	534.9	491.5	323.6	307.9	318.4	390.1	4759.5
3) B Norm	490.6	438.4	417.4	497.2	492.7	484.2	544.5	504.0	360.1	340.8	320.6	336.5	5226.9
4) A Norm	683.8	912.4	819.2	532.2	499.5	461.3	532.7	500.8	358.7	291.5	345.2	424.8	6362.2
5) Wet	1076.5	1177.6	869.9	797.8	727.2	601.2	606.9	598.3	474.8	369.4	486.8	878.4	8664.7
Wtd Avg.	627.4	702.1	594.5	560.5	545.4	499.0	545.8	515.0	373.7	324.7	368.3	518.4	6174.8

#### B. Sacramento River Total Diversion - Riparian

source: CVGSM		Thousand Acre Feet											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	1.8	1.9	11.1	110.8	154.3	153.4	155.2	135.9	64.3	25.7	3.3	1.7	819.4
2) Dry	2.5	2.5	7.0	100.3	166.4	180.3	189.4	173.0	76.5	24.4	5.4	3.5	931.3
3) B Norm	2.1	2.6	4.6	85.9	167.1	175.4	189.4	172.7	79.8	26.3	6.9	2.9	915.8
4) A Norm	3.4	2.1	3.1	74.6	168.5	180.9	192.9	175.5	79.6	25.2	3.7	3.3	912.7
5) Wet	2.4	2.2	3.7	65.4	162.2	180.2	191.3	177.3	82.8	23.8	3.9	2.3	897.5
Wtd Avg.	2.4	2.3	5.6	84.8	164.0	175.8	186.0	169.7	77.9	24.9	4.8	2.8	900.8

#### C. Sacramento River Total Diversion - Corning Canal

source: CVGSM		Thousand Acre Feet											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	0.11	0.31	0.34	1.36	2.57	2.50	3.52	3.04	1.91	0.66	0.12	0.20	16.64
2) Dry	0.00	0.01	0.11	0.83	1.94	1.76	2.75	2.53	1.31	0.34	0.01	0.00	11.58
3) B Norm	0.00	0.06	0.18	0.70	1.29	1.56	1.74	1.39	1.04	0.53	0.11	0.01	8.59
4) A Norm	0.00	0.00	0.03	0.59	1.72	2.14	2.77	2.52	1.44	0.41	0.04	0.01	11.69
5) Wet	0.00	0.05	0.20	0.88	2.61	2.78	3.78	3.31	2.19	0.73	0.04	0.00	16.58
Wtd Avg.	0.01	0.07	0.17	0.86	2.07	2.18	2.96	2.60	1.62	0.55	0.06	0.03	13.17

#### D. Sacramento River Total Diversion - Tehama-Colusa Canal

source: CVGSM		Thousand Acre Feet											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	0.07	0.08	0.72	7.80	15.63	14.52	24.23	12.98	6.58	1.23	0.02	0.14	84.01
2) Dry	0.00	0.00	0.10	5.83	14.78	11.48	21.55	12.88	6.48	1.33	0.03	0.00	74.43
3) B Norm	0.02	0.01	0.01	1.29	2.14	2.57	4.68	4.05	1.02	0.04	0.02	0.01	15.86
4) A Norm	0.27	0.00	0.04	2.62	10.46	12.44	17.93	10.90	3.41	0.83	0.39	0.67	59.97
5) Wet	0.00	0.14	0.08	4.44	11.26	8.74	16.42	9.81	4.93	1.01	0.02	0.00	56.85
Wtd Avg.	0.05	0.06	0.15	4.32	10.69	9.36	16.44	9.91	4.51	0.89	0.07	0.11	56.56

E. Sacramento River Total Diversion - Glenn-Colusa Canal

source: CVGSM

	Thousand Acre Feet												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	0.0	0.0	1.1	75.2	94.0	91.1	94.8	93.0	41.2	17.7	3.4	0.2	511.8
2) Dry	0.0	0.0	6.4	77.9	105.6	108.1	112.1	110.6	51.9	25.6	9.8	1.4	609.4
3) B Norm	0.2	0.0	5.9	70.4	117.3	119.1	126.8	118.8	63.9	30.6	8.6	1.7	663.3
4) A Norm	0.0	0.0	1.6	57.3	108.3	109.9	115.1	112.3	57.7	26.2	5.0	0.0	593.4
5) Wet	0.0	0.0	3.7	65.0	123.3	122.8	127.7	125.6	64.6	26.2	3.2	0.4	662.6
Wtd Avg.	0.0	0.0	4.1	69.4	112.2	112.8	118.0	114.8	57.6	25.8	6.1	0.8	621.7

F. Sacramento River Total Diversion - Right Bank Diverters

source: CVGSM

	Thousand Acre Feet												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	0.00	0.00	0.99	12.73	16.24	16.68	17.03	14.11	5.60	1.21	0.00	0.00	84.60
2) Dry	0.01	0.00	0.11	11.29	16.32	17.96	19.12	16.73	5.78	1.33	0.21	0.55	89.40
3) B Norm	0.16	0.00	0.23	9.80	12.85	13.31	15.25	11.94	4.45	1.09	0.28	0.57	69.92
4) A Norm	0.06	0.00	0.02	8.83	21.09	21.19	22.29	19.21	7.51	1.44	0.34	0.73	102.72
5) Wet	0.01	0.00	0.11	10.50	17.18	16.89	17.69	14.93	4.79	1.49	0.80	0.61	85.01
Wtd Avg.	0.05	0.00	0.24	10.61	16.49	16.94	18.04	15.19	5.41	1.33	0.39	0.52	85.22

G. Sacramento River Total Diversion - South Sutter Diversion

source: CVGSM

	Thousand Acre Feet												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	0.00	0.00	0.22	3.78	8.67	8.33	8.67	7.78	3.33	0.56	0.00	0.00	41.33
2) Dry	0.00	0.00	0.00	3.13	8.00	7.50	8.19	8.31	3.31	0.50	0.00	0.00	38.94
3) B Norm	0.00	0.00	0.29	3.36	6.14	6.86	7.36	6.21	2.21	0.64	0.07	0.00	33.14
4) A Norm	0.00	0.00	0.00	2.00	8.44	9.00	9.44	9.11	3.78	0.33	0.00	0.00	42.11
5) Wet	0.00	0.00	0.05	3.90	12.86	12.29	13.43	13.05	5.86	1.19	0.00	0.00	62.62
Wtd Avg.	0.00	0.00	0.10	3.35	9.25	9.13	9.84	9.36	3.93	0.72	0.01	0.00	45.70

H. Reference Condition for Sacramento River

source: calculated = Step 2A. - Step 2B. - Step 2C. - Step 2D. - Step 2E. - Step 2F. - Step 2G.

	TAF												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	293.6	305.4	380.3	223.4	130.8	112.4	134.1	127.0	140.2	211.4	271.0	280.6	2610.1
2) Dry	309.9	409.9	360.3	191.5	134.9	128.4	181.7	167.5	178.3	254.5	303.0	384.6	3004.4
3) B Norm	488.1	435.7	406.2	325.7	185.9	165.4	199.3	188.9	207.7	281.6	304.6	331.3	3520.3
4) A Norm	680.1	910.3	814.4	386.2	181.0	125.7	172.2	171.3	205.3	237.0	335.8	420.2	4639.5
5) Wet	1074.1	1175.2	862.0	647.7	397.7	257.5	236.6	254.4	309.6	315.0	478.8	875.0	6883.6
Wtd Avg.	624.8	699.7	584.1	387.1	230.7	172.8	194.5	193.5	222.8	270.5	356.9	514.1	4451.6

**Step 3. Quantified Targeted Benefit Change**

A. Quantified Targeted Benefit Change

source: calculated: = Step 1A. - Step 2H.

	Thousand Acre Feet												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	---	---	---	---	48.2	---	---	---	---	---	---	---	48.2
2) Dry	---	---	---	---	44.1	---	---	---	---	---	---	---	44.1
3) B Norm	---	---	---	20.3	160.1	---	---	---	---	---	---	---	180.4
4) A Norm	---	---	---	---	---	---	---	---	---	---	---	---	---
5) Wet	---	---	---	---	---	---	---	---	---	---	---	---	---
Wtd Avg.	---	---	---	---	---	---	---	---	---	---	---	---	---

#### Step 4. Area Affected By Targeted Benefit

##### A. Total Diversion Sub-Region 1

source: CVGSM

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	0.1	0.2	1.0	16.0	20.8	23.0	25.8	24.5	21.2	15.9	1.2	0.2	149.7
2) Dry	0.0	0.0	0.6	14.9	23.6	25.2	27.4	26.2	23.1	17.0	2.2	0.8	161.1
3) B Norm	0.0	0.0	0.3	14.2	23.9	25.4	27.0	25.8	22.5	18.8	2.2	0.2	160.4
4) A Norm	1.0	0.0	0.0	12.7	21.1	25.9	27.7	27.0	23.1	16.4	0.6	0.1	155.8
5) Wet	0.0	0.0	0.4	11.6	22.6	25.9	28.4	27.4	24.7	16.2	0.7	0.0	158.0
Wtd Avg.	0.2	0.0	0.4	13.6	22.7	25.3	27.4	26.4	23.2	16.9	1.4	0.3	157.8

##### B. Sub-Region 1 Streamflow Diversion Ratio

source: calculated = Step 2B./Step 4A.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1) Critical	0.00	0.63	0.92	0.98	0.97	0.95	0.94	0.95	0.97	0.98	0.90	0.53
2) Dry	0.00	0.00	0.96	0.99	0.98	0.98	0.96	0.97	0.98	0.99	0.98	0.94
3) B Norm	0.00	0.00	0.98	0.99	0.99	0.98	0.98	0.98	0.99	0.99	0.97	0.94
4) A Norm	0.97	0.00	0.00	0.99	0.98	0.97	0.96	0.96	0.98	0.99	0.91	0.77
5) Wet	0.00	0.00	0.90	0.99	0.97	0.97	0.96	0.96	0.97	0.99	0.93	0.00
Wtd Avg.	0.13	0.08	0.81	0.99	0.98	0.97	0.96	0.97	0.98	0.99	0.94	0.58

##### C. Total Diversion Sub-Region 2

source: CVGSM

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	0.22	0.42	2.23	10.29	13.04	12.14	15.74	14.41	10.47	4.88	0.46	0.33	84.64
2) Dry	0.00	0.01	1.80	13.27	17.21	16.84	19.90	18.30	12.75	5.15	0.69	0.06	105.99
3) B Norm	0.00	0.06	2.54	12.49	17.93	18.56	20.11	17.75	13.61	7.89	1.54	0.08	112.55
4) A Norm	0.00	0.00	0.92	12.37	19.07	19.94	21.36	19.10	13.44	4.87	1.09	0.12	112.28
5) Wet	0.00	0.10	2.39	10.31	20.25	21.32	23.80	21.85	17.10	6.06	0.80	0.00	123.99
Wtd Avg.	0.03	0.10	2.07	11.70	17.98	18.35	20.78	18.87	14.04	5.91	0.92	0.09	110.83

##### D. Sub-Region 2 Streamflow Diversion Ratio

source: calculated = Step 2B./Step 4C.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1) Critical	0.50	0.74	0.15	0.18	0.56	0.63	1.00	1.02	0.63	0.13	0.27	0.62
2) Dry	---	1.00	0.06	0.06	0.14	0.13	0.16	0.16	0.10	0.07	0.01	0.00
3) B Norm	---	1.00	0.07	0.06	0.07	0.09	0.09	0.09	0.08	0.07	0.07	0.09
4) A Norm	---	---	0.04	0.05	0.10	0.13	0.16	0.15	0.11	0.21	0.09	0.09
5) Wet	---	0.50	0.08	0.09	0.15	0.15	0.18	0.17	0.13	0.12	0.05	1.00
Wtd Avg.	---	---	0.08	0.08	0.18	0.19	0.26	0.26	0.18	0.11	0.08	0.42

##### E. Total Diversion Sub-Region 3

source: CVGSM

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	0.1	0.1	2.8	95.7	125.5	121.9	135.3	119.3	53.0	20.1	3.5	0.3	677.5
2) Dry	0.0	0.0	6.6	95.1	136.7	137.5	152.8	140.2	64.1	28.2	10.0	2.0	773.2
3) B Norm	0.4	0.0	6.1	81.5	132.3	134.9	146.7	134.8	69.4	31.7	8.9	2.3	749.0
4) A Norm	0.3	0.0	1.6	68.8	139.9	143.5	155.3	142.4	68.6	28.4	5.7	1.4	755.9
5) Wet	0.0	0.1	3.9	79.9	151.8	148.4	161.8	150.3	74.3	28.7	4.1	1.0	804.4
Wtd Avg.	0.1	0.1	4.5	84.4	139.3	139.0	152.3	139.7	67.4	28.0	6.6	1.5	763.0

F. Sub-Region 3 Streamflow Diversion Ratio

source: calculated = Step 2B./Step 4E.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1) Critical	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2) Dry	1.00	---	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
3) B Norm	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
4) A Norm	1.00	---	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
5) Wet	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Wtd Avg.	1.00	---	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

G. Total Diversion Sub-Region 4

source: CVGSM

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	0.2	0.2	7.0	75.5	103.5	99.8	97.9	83.9	31.8	6.3	0.3	0.0	506.5
2) Dry	0.4	0.4	3.8	66.4	108.9	116.5	121.6	109.5	37.7	3.6	0.9	0.4	570.2
3) B Norm	0.3	0.6	1.8	55.8	110.3	114.1	122.8	110.3	40.2	3.6	2.3	0.4	562.4
4) A Norm	0.4	0.3	1.1	50.8	114.9	116.0	124.3	110.9	38.5	4.9	0.3	0.0	562.5
5) Wet	0.5	0.4	1.3	43.0	107.9	118.1	123.6	113.0	41.5	3.8	0.9	0.2	554.2
Wtd Avg.	0.4	0.4	2.7	56.3	109.0	114.3	119.7	107.6	38.7	4.2	1.0	0.3	554.5

H. Sub-Region 4 Streamflow Diversion Ratio

source: calculated = Step 2B./Step 4G.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1) Critical	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	---
2) Dry	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
3) B Norm	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
4) A Norm	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
5) Wet	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Wtd Avg.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	---

I. Total Diversion Sub-Region 6

source: CVGSM

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	0.99	1.63	6.07	24.12	34.53	32.70	37.63	27.80	14.00	5.12	1.33	0.22	186.16
2) Dry	0.00	0.00	1.72	23.87	43.14	46.30	51.05	41.66	20.81	5.78	2.36	0.36	237.03
3) B Norm	0.10	0.16	2.54	22.44	43.36	47.78	50.06	40.76	20.94	5.79	0.99	0.36	235.28
4) A Norm	0.11	0.11	0.33	16.16	46.11	50.31	51.27	44.04	22.56	4.37	3.00	0.67	239.03
5) Wet	0.14	0.24	1.58	19.54	47.51	53.41	57.56	49.19	28.05	7.53	2.64	0.29	267.69
Wtd Avg.	0.21	0.33	2.23	21.29	43.78	47.51	51.11	42.27	22.38	6.04	2.12	0.36	239.63

J. Sub-Region 6 Streamflow Diversion Ratio

source: calculated = Step 2B./Step 4I.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1) Critical	0.00	0.00	0.02	0.18	0.24	0.23	0.21	0.24	0.13	0.00	0.00	0.00
2) Dry	---	---	0.04	0.19	0.22	0.24	0.23	0.26	0.15	0.05	0.11	0.88
3) B Norm	0.00	0.45	0.06	0.17	0.23	0.23	0.22	0.23	0.14	0.12	0.29	0.60
4) A Norm	1.00	0.00	0.33	0.14	0.16	0.23	0.23	0.24	0.16	0.10	0.19	0.83
5) Wet	0.00	0.00	0.00	0.09	0.14	0.17	0.16	0.18	0.11	0.06	0.14	0.50
Wtd Avg.	---	---	0.07	0.15	0.19	0.22	0.20	0.23	0.13	0.07	0.15	0.59

K. Total Diversion Sub-Region 7

source: CVGSM

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	9.78	7.97	11.20	30.03	48.82	52.39	57.52	51.73	31.81	18.40	12.12	10.52	342.30
2) Dry	9.49	8.26	10.31	30.06	52.66	58.82	65.28	61.97	38.93	17.43	10.97	9.68	373.86
3) B Norm	9.35	8.34	11.13	26.02	49.84	55.89	63.18	60.44	39.22	19.73	11.98	9.91	365.02
4) A Norm	9.47	9.66	11.16	20.62	53.01	59.92	66.10	62.70	39.39	16.14	10.86	9.80	368.82
5) Wet	9.96	8.61	11.88	24.30	58.14	64.86	73.98	70.61	44.04	19.97	11.77	10.73	408.85
Wtd Avg.	9.64	8.52	11.18	26.25	53.30	59.37	66.60	63.05	39.68	18.63	11.55	10.17	377.94

L. Sub-Region 7 Streamflow Diversion Ratio

source: calculated = Step 2B./Step 4K.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1) Critical	0.00	0.00	0.13	0.55	0.56	0.55	0.52	0.50	0.33	0.08	0.00	0.00
2) Dry	0.00	0.00	0.04	0.51	0.56	0.54	0.51	0.50	0.33	0.08	0.00	0.00
3) B Norm	0.00	0.02	0.06	0.49	0.53	0.50	0.51	0.49	0.34	0.06	0.01	0.00
4) A Norm	0.00	0.00	0.00	0.41	0.57	0.55	0.53	0.52	0.38	0.08	0.00	0.05
5) Wet	0.00	0.01	0.00	0.44	0.60	0.56	0.54	0.53	0.37	0.10	0.00	0.01
Wtd Avg.	0.00	0.01	0.04	0.48	0.57	0.54	0.52	0.51	0.35	0.08	0.00	0.01

M. Total Diversion Sub-Region 8

source: CVGSM

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	3.38	2.89	5.80	13.89	20.43	23.72	24.02	20.93	14.16	11.26	5.02	4.51	150.01
2) Dry	2.92	2.59	4.59	13.19	21.69	27.21	28.44	25.49	18.09	10.98	5.19	3.77	164.15
3) B Norm	2.56	2.59	5.53	14.44	25.54	32.44	32.81	28.34	19.79	13.06	4.64	3.36	185.09
4) A Norm	2.79	2.64	3.48	11.48	22.56	31.88	32.29	28.56	17.98	10.78	4.99	3.10	172.51
5) Wet	3.21	2.74	5.13	11.37	26.28	34.82	38.24	34.70	22.73	13.71	4.85	3.65	201.45
Wtd Avg.	2.98	2.68	4.96	12.76	23.82	30.74	32.24	28.68	19.32	12.24	4.93	3.66	179.00

N. Sub-Region 8 Streamflow Diversion Ratio

source: calculated = Step 2B./Step 4M.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1) Critical	0.46	0.54	0.33	0.18	0.17	0.15	0.16	0.19	0.22	0.25	0.38	0.34
2) Dry	0.71	0.80	0.49	0.20	0.15	0.14	0.16	0.17	0.19	0.25	0.40	0.55
3) B Norm	0.73	0.72	0.37	0.18	0.12	0.12	0.13	0.14	0.18	0.21	0.46	0.59
4) A Norm	0.68	0.67	0.54	0.20	0.15	0.13	0.14	0.16	0.20	0.26	0.45	0.68
5) Wet	0.58	0.63	0.42	0.22	0.13	0.11	0.12	0.13	0.17	0.20	0.39	0.50
Wtd Avg.	0.64	0.68	0.43	0.20	0.14	0.13	0.14	0.15	0.19	0.23	0.41	0.53

**Step 5. Water Balance - Flow Path Elements**

A. Rain Sub-Region 3 (inflow)

source: CVGSM Sub-Region 1 - 4 & 6 - 8 \* Step 4B.

Flow Path Not Affected

Thousand Acre Feet

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	154.9	114.3	71.2	41.6	54.9	19.5	4.4	22.8	24.9	49.5	77.9	---	635.7
2) Dry	---	---	155.4	65.5	34.2	13.8	8.0	20.1	48.6	51.0	124.3	220.2	741.1
3) B Norm	---	279.3	117.1	73.4	24.7	18.2	14.9	27.1	50.5	69.0	154.0	197.7	1,026.0
4) A Norm	---	---	162.3	65.7	32.9	6.3	8.2	18.1	45.9	105.6	177.5	245.1	867.7
5) Wet	---	231.9	172.3	116.3	25.5	20.7	11.6	25.2	34.3	118.6	225.2	394.2	1,375.8
Wtd Avg.	---	---	142.7	79.5	32.2	16.6	10.1	23.2	41.2	82.1	161.9	---	994.8

B. Surface Water Diversions Sub-Region 3 (inflow) Flow Path Not Affected  
source: CVGSM Sub-Region 1 - 4 & 6 - 8 \* Step 4B. Thousand Acre Feet

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	3.6	10.3	51.5	335.1	392.4	451.3	525.5	471.3	98.0	36.2	14.5	---	2,389.7
2) Dry	---	---	15.1	281.8	380.3	444.7	458.2	412.8	80.3	41.8	15.0	7.8	2,137.7
3) B Norm	---	4.8	17.2	277.3	379.8	434.5	450.6	401.1	85.7	41.4	15.2	7.6	2,115.0
4) A Norm	---	---	5.3	252.5	370.9	466.6	474.0	420.1	94.5	30.8	15.2	8.2	2,138.1
5) Wet	---	3.1	6.2	214.4	382.7	458.3	474.9	423.8	98.1	31.1	14.8	8.3	2,115.8
Wtd Avg.	---	---	16.3	263.5	381.3	450.5	472.6	422.4	91.0	36.3	14.9	---	2,159.4

C. Import Sub-Region 3 (inflow) Flow Path Not Affected  
source: CVGSM Sub-Region 1 - 4 & 6 - 8 \* Step 4B. Thousand Acre Feet

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	3.5	4.4	8.2	66.9	65.7	76.6	78.6	69.4	26.0	19.1	13.0	---	431.5
2) Dry	---	---	4.4	74.4	96.5	114.9	116.5	104.1	31.8	23.1	13.2	7.9	586.7
3) B Norm	---	3.3	5.3	79.0	109.5	126.2	131.6	117.9	34.9	23.1	13.7	7.8	652.1
4) A Norm	---	---	2.9	74.3	108.7	135.6	135.2	122.2	38.3	20.5	13.6	8.4	659.8
5) Wet	---	3.0	3.2	60.1	110.7	129.9	132.5	119.8	37.6	21.6	13.6	8.4	640.4
Wtd Avg.	---	---	4.5	70.0	101.0	119.5	121.9	109.5	34.3	21.8	13.5	---	605.6

D. Groundwater Pumping Sub-Region 3 (inflow) Flow Path Not Affected  
source: CVGSM Sub-Region 1 - 4 & 6 - 8 \* Step 4B. Thousand Acre Feet

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	0.6	4.2	41.6	260.7	292.4	363.8	430.7	361.4	209.8	17.4	1.8	---	1,984.3
2) Dry	---	---	9.2	136.5	178.2	226.7	236.1	194.8	155.2	12.7	1.1	0.7	1,151.3
3) B Norm	---	2.6	8.4	118.0	150.1	190.7	198.1	157.1	149.4	12.9	1.0	1.3	989.4
4) A Norm	---	---	2.8	103.3	139.8	197.3	203.6	162.8	149.7	13.6	1.1	0.9	974.9
5) Wet	---	0.7	3.6	95.8	134.6	178.0	185.5	148.3	149.4	8.8	0.4	1.0	906.1
Wtd Avg.	---	---	10.7	132.2	169.1	218.6	234.1	190.6	158.7	12.3	0.9	---	1,129.5

E. ET Rain Sub-Region 3 (outflow, irrecoverable) Flow Path Not Affected  
source: CVGSM Sub-Region 1 - 4 & 6 - 8 \* Step 4B. Thousand Acre Feet

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	44.0	73.9	55.1	-7.1	35.6	18.5	1.7	16.4	54.0	86.8	45.5	---	424.4
2) Dry	---	---	104.4	3.4	19.0	9.8	5.8	15.2	69.9	89.5	49.3	54.6	420.9
3) B Norm	---	103.9	99.6	5.1	13.1	15.6	9.5	18.3	69.7	93.4	60.6	53.2	541.8
4) A Norm	---	---	121.9	11.9	18.6	2.6	5.1	13.6	67.9	107.6	59.5	59.0	467.7
5) Wet	---	82.9	109.1	33.2	10.8	12.7	7.4	17.3	60.0	105.7	64.7	64.4	568.3
Wtd Avg.	---	---	100.7	12.5	17.4	12.0	6.4	16.4	64.5	97.2	57.1	---	496.8

F. Runoff from Rain Sub-Region 3 (outflow, irrecoverable) Flow Path Not Affected  
source: CVGSM Sub-Region 1 - 4 & 6 - 8 \* Step 4B. Thousand Acre Feet

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	60.5	43.2	22.2	8.8	19.8	3.9	0.7	6.3	6.3	12.2	18.9	---	202.8
2) Dry	---	---	77.0	19.2	7.9	2.6	1.8	5.7	18.8	15.9	43.3	88.4	280.7
3) B Norm	---	152.3	54.6	25.8	5.5	3.2	4.0	9.1	18.5	24.3	55.3	87.4	440.1
4) A Norm	---	---	80.7	20.1	8.4	0.5	1.6	6.1	17.5	39.0	70.9	114.2	359.1
5) Wet	---	140.6	89.8	46.0	5.4	4.1	2.3	8.3	11.6	50.9	99.0	223.4	681.5
Wtd Avg.	---	---	69.7	27.5	8.3	3.1	2.2	7.3	14.7	30.8	63.1	---	435.1

G. ETAW Sub-Region 3 (outflow, irrecoverable)  
source: CVGSM Sub-Region 1 - 4 & 6 - 8 \* Step 4B. Flow Path Not Affected  
Thousand Acre Feet

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	1.7	12.0	64.4	228.3	334.0	474.2	571.7	477.5	249.2	51.7	14.4	---	2,479.1
2) Dry	---	---	18.3	212.6	318.1	439.3	488.0	407.6	200.3	51.5	13.3	4.2	2,153.2
3) B Norm	---	2.8	20.4	208.1	315.6	424.6	472.9	391.2	197.7	50.1	12.4	3.9	2,099.8
4) A Norm	---	---	7.1	197.6	311.4	444.9	487.9	405.4	206.1	39.8	10.4	2.1	2,112.8
5) Wet	---	1.8	8.8	175.8	320.3	427.6	475.0	394.4	208.5	36.5	6.7	0.2	2,055.7
Wtd Avg.	---	---	20.4	200.6	319.5	438.0	491.9	409.1	209.4	45.1	10.9	---	2,149.9

H. Export Sub-Region 3 (outflow, irrecoverable)  
source: CVGSM Sub-Region 1 - 4 & 6 - 8 \* Step 4B. Thousand Acre Feet

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	3.6	5.3	8.8	56.0	111.4	137.2	196.9	179.7	35.4	17.3	12.7	---	764.3
2) Dry	---	---	2.9	37.7	65.6	75.3	84.7	79.4	26.3	19.7	12.5	7.4	411.4
3) B Norm	---	3.5	3.4	36.1	55.1	67.5	72.2	66.2	26.7	19.7	13.1	7.2	370.8
4) A Norm	---	---	1.5	33.0	60.0	80.2	89.0	81.4	29.0	19.2	13.0	7.9	414.2
5) Wet	---	3.0	1.8	32.5	69.8	83.0	92.2	84.5	29.9	19.8	13.2	7.9	437.7
Wtd Avg.	---	---	3.3	37.6	70.0	84.8	99.6	91.6	29.0	19.4	13.0	---	457.6

I. Surface Water Return Sub-Region 3 (outflow, recoverable)  
source: CVGSM Sub-Region 1 - 4 & 6 - 8 \* Step 4B. Thousand Acre Feet

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	0.0	0.9	15.0	260.6	181.8	167.1	149.2	132.2	29.5	4.1	0.1	---	940.5
2) Dry	---	---	3.3	143.7	161.5	162.1	132.4	122.1	22.5	4.2	0.1	0.0	751.9
3) B Norm	---	0.1	3.3	135.3	165.1	150.8	125.4	112.4	21.9	4.0	0.1	0.0	718.3
4) A Norm	---	---	0.3	109.0	139.4	166.7	128.4	115.1	24.4	3.2	0.1	0.0	686.5
5) Wet	---	0.0	0.3	82.1	137.0	147.9	120.2	108.6	23.7	3.2	0.1	0.0	623.0
Wtd Avg.	---	---	3.5	133.9	154.6	156.7	128.9	116.4	23.9	3.7	0.1	---	721.9

J. Percolation to Groundwater Sub-Region 3 (outflow, recoverable)  
source: CVGSM Sub-Region 1 - 4 & 6 - 8 \* Step 4B. Thousand Acre Feet

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	19.8	6.5	12.7	114.8	113.6	108.4	117.2	116.5	26.2	1.9	3.6	---	641.3
2) Dry	---	---	6.6	91.7	97.6	98.5	91.9	92.8	17.1	1.2	9.4	27.3	534.0
3) B Norm	---	36.7	4.7	88.0	91.0	95.2	94.1	94.3	20.5	2.3	11.2	26.7	564.8
4) A Norm	---	---	4.8	87.3	95.1	94.2	91.5	89.0	20.4	1.8	16.4	41.4	542.0
5) Wet	---	28.4	6.3	73.4	88.6	95.1	90.1	91.0	19.3	2.6	24.2	81.4	600.5
Wtd Avg.	---	---	6.7	87.8	95.3	97.5	95.1	95.1	20.1	2.0	14.4	---	575.5

K. Evaporation Flows Sub-Region 3 (outflow, irrecoverable)  
source: = 0.02 \* (Step 5B + 5C - 5H)  
= 0.02 \* (Surface Water Diversion + Import - Export)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	0.1	0.2	1.0	6.9	6.9	7.8	8.1	7.2	1.8	0.8	0.3	---	41.1
2) Dry	---	---	0.3	6.4	8.2	9.7	9.8	8.8	1.7	0.9	0.3	0.2	46.3
3) B Norm	---	0.1	0.4	6.4	8.7	9.9	10.2	9.1	1.9	0.9	0.3	0.2	47.9
4) A Norm	---	---	0.1	5.9	8.4	10.4	10.4	9.2	2.1	0.6	0.3	0.2	47.7
5) Wet	---	0.1	0.2	4.8	8.5	10.1	10.3	9.2	2.1	0.7	0.3	0.2	46.4
Wtd Avg.	---	---	0.4	5.9	8.2	9.7	9.9	8.8	1.9	0.8	0.3	---	46.1

L. Sub-Region Water Balance 3

source: = Step 5.(A + B + C + D) - Step5. (E + F + G + H + I + J + K)  
 = (Rain + Surface Water Diversions + Import + Groundwater Pumping) - (ET Rain +  
 Runoff from Rain + ETAW + Export + Surface & Groundwater Return + Evaporation)

	Thousand Acre Feet												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	15.2	-4.7	-3.1	26.2	1.6	-4.2	-4.3	-7.5	-23.9	-17.4	4.4	---	-17.8
2) Dry	---	---	-15.2	30.8	8.0	2.0	3.0	0.3	-21.4	-17.7	10.1	29.8	29.6
3) B Norm	---	-7.0	-16.6	29.0	6.6	1.7	4.4	1.8	-18.8	-13.3	14.6	21.2	23.5
4) A Norm	---	---	-23.4	19.2	7.9	4.2	4.8	2.3	-22.4	-13.7	16.4	27.4	22.7
5) Wet	---	-11.4	-13.1	25.4	9.5	4.3	4.7	2.5	-19.1	-11.6	18.1	17.5	27.0
Wtd Avg.	---	---	-14.3	26.7	7.3	2.1	3.1	0.5	-20.6	-14.4	13.5	---	20.5

M. Applied Water Ratio Sub-Region 3

source: = Step 5G / Step 5 (B + C+ D - H)  
 = ETAW/(Surface Water Diversions + Import + Groundwater Pumping - Export)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	0.41	0.88	0.70	0.38	0.52	0.63	0.68	0.66	0.83	0.93	0.87	---	0.61
2) Dry	---	---	0.71	0.47	0.54	0.62	0.67	0.64	0.83	0.89	0.79	0.47	0.62
3) B Norm	---	0.40	0.74	0.47	0.54	0.62	0.67	0.64	0.81	0.87	0.74	0.42	0.62
4) A Norm	---	---	0.74	0.50	0.56	0.62	0.67	0.65	0.81	0.87	0.62	0.22	0.63
5) Wet	---	0.47	0.79	0.52	0.57	0.63	0.68	0.65	0.82	0.87	0.43	0.02	0.64
Wtd Avg.	---	---	0.74	0.48	0.55	0.62	0.67	0.65	0.82	0.88	0.66	---	0.63

N. Groundwater Check Sub-Region 3

source: = Step 5 (J - D)  
 = Groundwater Return Flows - Groundwater Pumping

	Thousand Acre Feet												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	19.2	2.3	-28.9	-145.8	-178.7	-255.4	-313.5	-244.8	-183.6	-15.5	1.8	---	-1,343.1
2) Dry	---	---	-2.6	-44.9	-80.6	-128.3	-144.2	-102.0	-138.1	-11.5	8.2	26.7	-617.3
3) B Norm	---	34.1	-3.6	-30.0	-59.1	-95.5	-104.0	-62.9	-128.9	-10.6	10.3	25.5	-424.7
4) A Norm	---	---	2.0	-16.0	-44.7	-103.0	-112.1	-73.8	-129.4	-11.7	15.3	40.5	-433.0
5) Wet	---	27.7	2.7	-22.4	-46.0	-82.9	-95.4	-57.3	-130.1	-6.2	23.9	80.4	-305.6
Wtd Avg.	---	---	-4.0	-44.4	-73.8	-121.1	-139.1	-95.4	-138.6	-10.3	13.5	---	-554.0

## Step 6. Idealized Agricultural Potential

### A. Export Adjustment

0% of Export (Step 5H.) water is available for flow/timing changes in Sub-Region 1

0% of Export (Step 5H.) water is available for flow/timing changes in Sub-Region 2

0% of Export (Step 5H.) water is available for flow/timing changes in Sub-Region 3

92% of Export (Step 5H.) water is available for flow/timing changes in Sub-Region 4

0% of Export (Step 5H.) water is available for flow/timing changes in Sub-Region 6

92% of Export (Step 5H.) water is available for flow/timing changes in Sub-Region 7

0% of Export (Step 5H.) water is available for flow/timing changes in Sub-Region 8

note: Import (Step 5C) and Export (Step 5H) are in the water balance. In this Step (7D) Export water is considered water that flows through districts in Sub-Regions 4, 5, and 7. This water is available to make flow/timing changes

source: CVGSM Sub-Region 1 - 4 & 6 - 8

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	---	---	16.2	103.1	205.1	252.5	362.3	330.7	65.1	31.7	---	---	1,366.7
2) Dry	---	---	5.4	69.3	120.6	138.6	155.8	146.0	48.3	36.2	---	---	720.4
3) B Norm	---	---	6.3	66.4	101.3	124.2	132.8	121.8	49.1	36.3	---	---	638.4
4) A Norm	---	---	2.7	60.8	110.5	147.6	163.8	149.7	53.4	35.4	---	---	723.8
5) Wet	---	---	3.3	59.9	128.5	152.6	169.6	155.5	55.0	36.5	---	---	760.8
Wtd Avg.	---	---	6.0	69.2	128.8	156.0	183.3	168.6	53.4	35.6	---	---	800.8

### B. Idealized Agricultural Potential

source: = Step 5 ((B + C + D) + Step 6A. - Step 5 (G + H))

= Surface Water Diversions + Import + Groundwater Diversions) - (ETAW + Export + Export Adjustment)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	---	---	44.3	481.5	510.1	532.8	628.5	575.6	114.3	35.5	---	---	2,922.6
2) Dry	---	---	12.8	311.7	391.9	410.4	394.0	370.8	89.1	42.6	---	---	2,023.2
3) B Norm	---	---	13.4	296.5	370.0	383.5	368.0	340.6	94.6	43.8	---	---	1,910.3
4) A Norm	---	---	5.2	260.3	358.4	422.0	399.6	368.1	100.9	41.2	---	---	1,955.6
5) Wet	---	---	5.6	221.8	366.4	408.3	395.3	368.5	101.7	41.7	---	---	1,909.4
Wtd Avg.	---	---	13.8	296.7	390.7	421.8	420.4	390.3	98.9	41.5	---	---	2,074.2

## Step 7. Achievable Agricultural Potential

### A. Farm Demand

assumes very low farm loss fraction for Sub-R 0.13

assumes very low farm loss fraction for Sub-R 0.13

assumes very low farm loss fraction for Sub-R 0.24

assumes very low farm loss fraction for Sub-R 0.25

assumes very low farm loss fraction for Sub-R 0.13

assumes very low farm loss fraction for Sub-R 0.14

assumes very low farm loss fraction for Sub-R 0.13

source: = ETAW / Farm High (1- loss fraction)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	---	---	83.2	290.8	424.2	602.7	721.6	602.7	316.4	65.9	---	---	3,107.6
2) Dry	---	---	23.3	273.0	407.0	562.8	624.9	521.9	257.7	65.6	---	---	2,736.1
3) B Norm	---	---	26.1	267.5	404.8	545.2	607.2	502.5	254.9	63.9	---	---	2,672.1
4) A Norm	---	---	9.1	254.7	399.3	570.2	624.9	519.7	264.9	50.5	---	---	2,693.3
5) Wet	---	---	11.2	227.6	410.6	548.8	609.6	506.4	268.8	46.6	---	---	2,629.6
Wtd Avg.	---	---	26.2	258.0	408.9	561.1	629.3	523.5	269.1	57.5	---	---	2,733.6

B. Groundwater Pumping after System Improvements

- existing farm applied water ratio for Sub-Region 1 = 0.7
- existing farm applied water ratio for Sub-Region 2 = 0.7
- existing farm applied water ratio for Sub-Region 3 = 0.7
- existing farm applied water ratio for Sub-Region 4 = 0.7
- existing farm applied water ratio for Sub-Region 6 = 0.7
- existing farm applied water ratio for Sub-Region 7 = 0.7
- existing farm applied water ratio for Sub-Region 8 = 0.7

source: = (1 - farm AW ratio \* (1/farm AW ratio - 1/(1-farm very low loss fraction))) \* Groundwater Pumping

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	---	---	36.8	231.2	257.1	318.7	372.2	312.6	185.8	15.1	---	---	1,729.5
2) Dry	---	---	8.1	120.7	156.8	198.7	205.8	170.4	140.2	10.8	---	---	1,011.5
3) B Norm	---	---	7.3	104.2	132.1	166.9	172.7	137.7	135.2	11.0	---	---	867.0
4) A Norm	---	---	2.5	91.7	122.8	172.0	176.4	141.9	135.0	11.5	---	---	853.8
5) Wet	---	---	3.1	85.2	117.8	155.1	160.8	129.2	135.2	7.5	---	---	793.8
Wtd Avg.	---	---	9.4	117.2	148.6	191.1	203.2	166.1	142.9	10.5	---	---	989.0

C. Farm Demand not met by Groundwater Pumping

source: = Step 7.A - Step 7.B

= Farm Demand - Groundwater Pumping

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	---	---	46.4	59.6	167.2	283.9	349.5	290.1	130.7	50.8	---	---	1,378.1
2) Dry	---	---	15.2	152.2	250.2	364.2	419.1	351.5	117.4	54.8	---	---	1,724.6
3) B Norm	---	---	18.8	163.3	272.7	378.4	434.5	364.8	119.7	52.9	---	---	1,805.1
4) A Norm	---	---	6.5	163.0	276.5	398.2	448.5	377.8	129.9	39.0	---	---	1,839.4
5) Wet	---	---	8.1	142.4	292.9	393.7	448.8	377.2	133.6	39.2	---	---	1,835.8
Wtd Avg.	---	---	16.7	140.8	260.3	370.0	426.0	357.4	126.2	47.1	---	---	1,744.6

D. Water Supplier Delivery to Meet Farm Demand

assumes district loss fraction of 0.08

source: = Step 7C / District High (1- loss fraction)

= Farm Demand not met by Groundwater Pumping/(1 - 0.08)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	---	---	50.4	64.8	181.7	308.6	379.8	315.3	142.0	55.2	---	---	1,497.9
2) Dry	---	---	16.6	165.5	271.9	395.8	455.6	382.1	127.7	59.6	---	---	1,874.6
3) B Norm	---	---	20.4	177.5	296.4	411.3	472.3	396.6	130.1	57.5	---	---	1,962.0
4) A Norm	---	---	7.1	177.2	300.5	432.8	487.5	410.7	141.2	42.4	---	---	1,999.4
5) Wet	---	---	8.8	154.8	318.3	427.9	487.8	410.0	145.2	42.6	---	---	1,995.4
Wtd Avg.	---	---	18.2	153.0	283.0	402.2	463.1	388.5	137.1	51.2	---	---	1,896.3

E. Achievable Agricultural Potential

source = Step 5.(B + C - H) + Step 6A - Step 7D.

= Surface Water Diversions + Import - Export + Export Adjustment - Water Supplier Delivery to Meet Farm Demand

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	---	---	16.7	384.3	370.0	334.5	389.7	376.4	11.7	14.6	---	---	1,897.9
2) Dry	---	---	5.4	222.3	259.9	227.1	190.3	201.5	6.5	21.8	---	---	1,134.8
3) B Norm	---	---	5.0	209.1	239.2	206.1	170.5	178.1	12.9	23.5	---	---	1,044.3
4) A Norm	---	---	2.4	177.4	229.4	236.8	196.4	200.0	16.0	25.1	---	---	1,083.5
5) Wet	---	---	2.0	147.1	233.8	230.0	197.0	204.6	15.6	26.8	---	---	1,056.9
Wtd Avg.	---	---	5.4	212.0	258.1	239.0	215.1	220.3	12.5	23.2	---	---	1,185.6

F. Groundwater Check after System Improvements

$$\text{source} = (0.13 * 0.80 * \text{ETAW}) + (0.13 * 0.80 * \text{ETAW}) + (0.04 * (\text{Farm Demand w/o Groundwater} - \text{Water Supplier Delivery})) - \text{Groundwater Pumping}$$

	Thousand Acre Feet												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	---	---	-30.3	-222.2	-236.9	-285.2	-338.5	-284.4	-168.5	-8.8	---	---	-1,574.7
2) Dry	---	---	-6.1	-99.9	-124.2	-151.8	-153.1	-125.5	-120.4	-4.2	---	---	-785.2
3) B Norm	---	---	-4.9	-82.0	-96.1	-117.8	-117.0	-89.9	-114.7	-4.5	---	---	-626.8
4) A Norm	---	---	-1.7	-68.8	-86.6	-121.5	-120.7	-93.7	-114.0	-7.1	---	---	-614.0
5) Wet	---	---	-2.1	-64.6	-79.9	-104.7	-104.2	-80.7	-112.9	-2.7	---	---	-551.8
Wtd Avg.	---	---	-7.2	-97.4	-114.8	-144.0	-150.8	-121.2	-122.4	-4.8	---	---	-762.7

**GW Losses to Farm Fraction**

A. Quantifiable Objective

$$\text{source} = \text{minimum (Step 3A. , Step 7E.)}$$

	Thousand Acre Feet												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	---	---	---	---	48.2	---	---	---	---	---	---	---	48.2
2) Dry	---	---	---	---	44.1	---	---	---	---	---	---	---	44.1
3) B Norm	---	---	---	20.3	160.1	---	---	---	---	---	---	---	180.4
4) A Norm	---	---	---	---	---	---	---	---	---	---	---	---	0.0
5) Wet	---	---	---	---	---	---	---	---	---	---	---	---	0.0
Wtd Avg.	---	---	---	---	---	---	---	---	---	---	---	---	53.1

## Detail 88, Decrease Nonproductive ET, SubRegion 9

### Step 1. Quantified Targets

#### A. Acreage Assumed for Reduction of Nonproductive ET

source: CVGSM Sub-Region 9

Crop	Potential for ET Red.	Existing		Assumed for ET Reduction*	
		acres	percent	acres	percent
Pasture	No	26,400	0%	0	0%
Alfalfa	No	56,300	0%	0	0%
Sugar Beet	No	33,400	0%	0	0%
Field	No	115,500	0%	0	0%
Rice	No	900	0%	0	0%
Truck	Yes	32,200	30%	9,660	30%
Tomato	Yes	42,000	30%	12,600	30%
Orchard	Yes	21,100	30%	6,330	30%
Grains	No	102,500	0%	0	0%
Vineyard	Yes	5,700	30%	1,710	30%
Cotton	No	0	0%	0	0%
Citrus and Olives	Yes	0	0%	0	0%
<b>Total</b>		<b>436,000</b>		<b>30,300</b>	<b>7%</b>

\*The Assumed Acreage for ET Reduction is 30% of the crops that have the Potential for ET Reduction.

#### B. Existing ET for Sub-Region 9

source: CVGSM

Crop													Inches
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Pasture	---	---	---	---	---	---	---	---	---	---	---	---	---
Alfalfa	---	---	---	---	---	---	---	---	---	---	---	---	---
Sugar Beet	---	---	---	---	---	---	---	---	---	---	---	---	---
Field	---	---	---	---	---	---	---	---	---	---	---	---	---
Rice	---	---	---	---	---	---	---	---	---	---	---	---	---
Truck	0.00	0.00	0.00	1.30	3.20	6.40	8.30	5.50	1.70	1.00	0.00	0.00	27.40
Tomato	0.00	0.00	0.00	1.30	3.20	6.40	8.30	5.50	1.70	1.00	0.00	0.00	27.40
Orchard	0.70	1.50	1.70	2.70	4.90	5.90	7.00	6.10	4.40	2.50	1.10	0.60	39.10
Grains	---	---	---	---	---	---	---	---	---	---	---	---	---
Vineyard	0.00	0.00	0.00	1.50	3.60	4.90	6.40	5.30	3.60	1.10	0.00	0.00	26.40
Cotton	---	---	---	---	---	---	---	---	---	---	---	---	---
Citrus and Olives	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---
<b>Total</b>	<b>0.15</b>	<b>0.31</b>	<b>0.36</b>	<b>1.60</b>	<b>3.58</b>	<b>6.21</b>	<b>7.92</b>	<b>5.61</b>	<b>2.37</b>	<b>1.32</b>	<b>0.23</b>	<b>0.13</b>	<b>29.79</b>

#### C. ET from Rain for Sub-Region 9

source: CVGSM

													Inches
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	0.50	0.86	0.66	0.50	0.72	0.07	0.00	0.17	0.06	0.51	0.59	0.39	5.01
2) Dry	0.50	0.94	1.18	0.79	0.54	0.00	0.00	0.14	0.12	0.43	0.64	0.39	5.67
3) B Norm	0.50	0.92	1.05	0.94	0.51	0.00	0.00	0.19	0.12	0.52	0.74	0.40	5.88
4) A Norm	0.50	1.00	1.39	0.93	0.66	0.00	0.00	0.13	0.08	0.60	0.72	0.39	6.40
5) Wet	0.50	0.90	1.31	1.64	0.58	0.00	0.00	0.17	0.06	0.77	0.82	0.40	7.15
<b>Wtd Avg.</b>	<b>0.50</b>	<b>0.92</b>	<b>1.15</b>	<b>1.06</b>	<b>0.58</b>	<b>0.01</b>	<b>0.00</b>	<b>0.16</b>	<b>0.09</b>	<b>0.58</b>	<b>0.72</b>	<b>0.40</b>	<b>6.17</b>

D. Existing ETAW for Sub-Region 9

source: calculated = Step 1B.(Average Total) - Step 1C., (set to 0 if Step 1B. - Step 1C. <0)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	0.00	0.00	0.00	1.10	2.86	6.14	7.92	5.45	2.32	0.81	0.00	0.00	26.60
2) Dry	0.00	0.00	0.00	0.82	3.04	6.21	7.92	5.47	2.25	0.89	0.00	0.00	26.60
3) B Norm	0.00	0.00	0.00	0.67	3.07	6.21	7.92	5.43	2.25	0.80	0.00	0.00	26.35
4) A Norm	0.00	0.00	0.00	0.67	2.92	6.21	7.92	5.48	2.29	0.72	0.00	0.00	26.22
5) Wet	0.00	0.00	0.00	0.00	3.00	6.21	7.92	5.45	2.31	0.55	0.00	0.00	25.44
Wtd Avg.	0.00	0.00	0.00	0.56	2.99	6.20	7.92	5.45	2.28	0.73	0.00	0.00	26.14

E. Target ETAW for Sub-Region 9

source: calculated = Step 1D. \* 90%

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	0.00	0.00	0.00	0.99	2.57	5.53	7.13	4.90	2.08	0.73	0.00	0.00	23.94
2) Dry	0.00	0.00	0.00	0.73	2.74	5.59	7.13	4.92	2.03	0.80	0.00	0.00	23.94
3) B Norm	0.00	0.00	0.00	0.60	2.76	5.59	7.13	4.89	2.02	0.72	0.00	0.00	23.71
4) A Norm	0.00	0.00	0.00	0.60	2.63	5.59	7.13	4.93	2.06	0.65	0.00	0.00	23.60
5) Wet	0.00	0.00	0.00	0.00	2.70	5.59	7.13	4.90	2.08	0.50	0.00	0.00	22.89
Wtd Avg.	0.00	0.00	0.00	0.50	2.69	5.58	7.13	4.91	2.05	0.66	0.00	0.00	23.53

**Step 2. Reference Condition**

For ET Reduction the Reference Condition is the existing Crop ET, Step 1B.

**Step 3. Quantified Targeted Benefit Change**

A. Quantified Targeted Benefit Change for Sub-Region 9

source: calculated = Step 1D - Step 1E

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	---	---	---	0.11	0.29	0.61	0.79	0.54	0.23	0.08	---	---	2.66
2) Dry	---	---	---	0.08	0.30	0.62	0.79	0.55	0.23	0.09	---	---	2.66
3) B Norm	---	---	---	0.07	0.31	0.62	0.79	0.54	0.22	0.08	---	---	2.63
4) A Norm	---	---	---	0.07	0.29	0.62	0.79	0.55	0.23	0.07	---	---	2.62
5) Wet	---	---	---	---	0.30	0.62	0.79	0.54	0.23	0.06	---	---	2.54
Wtd Avg.	---	---	---	0.06	0.30	0.62	0.79	0.55	0.23	0.07	---	---	2.61

B. Quantified Targeted Benefit Change for Sub-Region 9

source: calculated = Step 1D - Step 1E

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	---	---	---	0.28	0.72	1.55	2.00	1.38	0.58	0.20	---	---	6.7
2) Dry	---	---	---	0.21	0.77	1.57	2.00	1.38	0.57	0.22	---	---	6.7
3) B Norm	---	---	---	0.17	0.78	1.57	2.00	1.37	0.57	0.20	---	---	6.7
4) A Norm	---	---	---	0.17	0.74	1.57	2.00	1.38	0.58	0.18	---	---	6.6
5) Wet	---	---	---	---	0.76	1.57	2.00	1.38	0.58	0.14	---	---	6.4
Wtd Avg.	---	---	---	0.14	0.76	1.57	2.00	1.38	0.58	0.19	---	---	6.6

**Step 4. Area Affected by Targeted Benefit**

Area affected are the 30,300 acres identified in Step 1A.

**Step 5. Water Flow Path Elements**

---

The flow path elements used in this analysis are given in Step 1.

**Step 6. Idealized Agricultural Potential**

---

Additional ET research is required to determine this component.

**Step 7. Achievable Agricultural Potential**

---

The farm Available Agricultural Potential is the same as Step 3B.

**Step 8. Quantifiable Objective**

---

A. For ET Reduction the Quantifiable Objective is Step 3B

**Detail 89, Provide long-term diversion flexibility to increase the water supply for beneficial uses.**

**Step 1. Quantified Targets**

A. Percentage of Subregion 9 in each Wetland Region

source: GIS analysis

Basin	Basin Acres	Sub-Region 9 Acres	Ratio Acreage in Sub-Region to Total Acreage
Colusa	1,100,765	1	--
Butte	574,618	1	--
Sutter	224,142	1	--
American	517,893	28	--
Yolo	514,963	53,361	0.10
Delta	1,332,584	630,237	0.47
Suisun	99,311	35	--
San Joaquin	1,877,034	1	--
Tulare	3,523,884	1	--

B. Annual Water Need for Optimum Habitat by Wetland Type

source: Central Valley Wetlands Water Supply Investigations (August, 2000)

Basin	Seasonal Wetlands	Semi-Permanent Wetlands	Permanent Wetlands	Annual Total
-----Acre Feet-----				
Colusa	43,435	7,563	6,771	57,769
Butte	72,923	11,337	10,150	94,410
Sutter	469	81	73	622
American	5,695	992	888	7,575
Yolo	25,755	4,484	4,015	34,254
Delta	10,053	1,843	1,650	13,546
Suisun	119,995	21,993	19,690	161,677
San Joaq.	188,480	20,663	15,856	225,000
Tulare	15,640	1,854	1,415	18,908

C. Fraction of Water Need Requirements by Month as a Percentage of Total Water Need- Seasonal Wetlands

source: Central Valley Wetlands Water Supply Investigations (August, 2000)

Basin	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Colusa	0.04	0.04	0.04	0.00	0.14	0.00	0.00	0.18	0.36	0.08	0.08	0.04	1.0
Butte	0.04	0.04	0.04	0.00	0.18	0.00	0.00	0.16	0.36	0.09	0.07	0.04	1.0
Sutter	0.04	0.04	0.04	0.00	0.14	0.00	0.00	0.18	0.36	0.08	0.08	0.04	1.0
American	0.04	0.04	0.04	0.00	0.14	0.00	0.00	0.18	0.36	0.08	0.08	0.04	1.0
Yolo	0.04	0.04	0.04	0.00	0.14	0.00	0.00	0.18	0.36	0.08	0.08	0.04	1.0
Delta	0.04	0.04	0.04	0.05	0.00	0.00	0.00	0.19	0.42	0.08	0.08	0.04	1.0
Suisun	0.04	0.04	0.04	0.05	0.00	0.00	0.00	0.19	0.42	0.08	0.08	0.04	1.0
San Joaq.	0.04	0.04	0.00	0.00	0.15	0.05	0.00	0.15	0.38	0.08	0.08	0.04	1.0
Tulare	0.04	0.04	0.00	0.15	0.00	0.11	0.00	0.09	0.38	0.08	0.08	0.04	1.0

D. Fraction of Water Need Requirements by Month as a Percentage of Total Water Need- Semi-Permanent Wetlands  
 source: Central Valley Wetlands Water Supply Investigations (August, 2000)

Basin	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Colusa	0.03	0.03	0.05	0.07	0.07	0.14	0.14	0.00	0.00	0.41	0.05	0.03	1.0
Butte	0.03	0.03	0.05	0.07	0.07	0.14	0.14	0.00	0.00	0.41	0.05	0.03	1.0
Sutter	0.03	0.03	0.05	0.07	0.07	0.14	0.14	0.00	0.00	0.41	0.05	0.03	1.0
American	0.03	0.03	0.05	0.07	0.07	0.14	0.14	0.00	0.00	0.41	0.05	0.03	1.0
Yolo	0.03	0.03	0.05	0.07	0.07	0.14	0.14	0.00	0.00	0.41	0.05	0.03	1.0
Delta	0.03	0.03	0.05	0.07	0.07	0.14	0.14	0.00	0.00	0.41	0.05	0.03	1.0
Suisun	0.03	0.03	0.05	0.07	0.07	0.14	0.14	0.00	0.00	0.41	0.05	0.03	1.0
San Joaq.	0.03	0.03	0.05	0.07	0.07	0.14	0.14	0.00	0.00	0.41	0.05	0.03	1.0
Tulare	0.03	0.04	0.06	0.08	0.08	0.13	0.13	0.00	0.00	0.38	0.06	0.04	1.0

E. Fraction of Water Need Requirements by Month as a Percentage of Total Water Need- Permanent Wetlands  
 source: Central Valley Wetlands Water Supply Investigations (August, 2000)

Basin	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Colusa	0.02	0.02	0.04	0.08	0.11	0.15	0.15	0.15	0.13	0.08	0.06	0.02	1.0
Butte	0.02	0.02	0.04	0.08	0.11	0.15	0.15	0.15	0.13	0.08	0.06	0.02	1.0
Sutter	0.02	0.02	0.04	0.08	0.11	0.15	0.15	0.15	0.13	0.08	0.06	0.02	1.0
American	0.02	0.02	0.04	0.08	0.11	0.15	0.15	0.15	0.13	0.08	0.06	0.02	1.0
Yolo	0.02	0.02	0.04	0.08	0.11	0.15	0.15	0.15	0.13	0.08	0.06	0.02	1.0
Delta	0.02	0.02	0.04	0.08	0.11	0.15	0.15	0.15	0.13	0.08	0.06	0.02	1.0
Suisun	0.02	0.02	0.04	0.08	0.11	0.15	0.15	0.15	0.13	0.08	0.06	0.02	1.0
San Joaq.	0.02	0.02	0.04	0.08	0.11	0.15	0.15	0.15	0.13	0.08	0.06	0.02	1.0
Tulare	0.02	0.02	0.04	0.08	0.11	0.15	0.15	0.15	0.13	0.08	0.06	0.02	1.0

F. Target Water Application for Private Wetlands in Sub-Region 9

source: calculated using Step1A through Step 1E

	Thousand Acre Feet												Total
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Seasonal	0.3	0.3	0.3	0.3	0.4	-	-	1.4	3.0	0.6	0.6	0.3	7.4
Semi-Perman	0.0	0.0	0.1	0.1	0.1	0.2	0.2	-	-	0.5	0.1	0.0	1.3
Permanent	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.0	1.2
Total	0.4	0.4	0.4	0.4	0.6	0.4	0.4	1.6	3.1	1.2	0.8	0.4	10.0

**Step 2. Reference Condition**

A. Annual Available Water Supply by Wetland Type

source: Central Valley Wetlands Water Supply Investigations

Basin	Wetlands		Permanent Wetlands		Total
	-----Acre Feet-----				
Colusa	36,601	6,625	6,101	49,327	
Butte	57,797	9,261	8,667	75,725	
Sutter	355	66	62	483	
American	4,328	804	754	5,886	
Yolo	25,755	4,484	4,015	34,254	
Delta	10,053	1,843	1,650	13,546	
Suisun	119,995	21,993	19,690	161,678	
San Joaquin	181,676	19,922	15,403	217,001	
Tulare	15,181	1,802	1,373	18,356	

B. Available Water for Private Wetlands in Sub-Region 9

source: calculated based on Step 2A and steps 1A,1C,1D, and 1E

	Thousand Acre Feet												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Seasonal	0.3	0.3	0.3	0.3	0.4	-	-	1.4	3.0	0.6	0.6	0.3	7.4
Semi-Perm.	0.0	0.0	0.1	0.1	0.1	0.2	0.2	-	-	0.5	0.1	0.0	1.3
Permanent	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.0	1.2
Total	0.4	0.4	0.4	0.4	0.6	0.4	0.4	1.6	3.1	1.2	0.8	0.4	10.0

**Step 3. Quantified Targeted Benefit Change**

A. Additional Water Required for Optimum Management of Private Wetlands in Sub-Region

source: calculated: Step 1F- Step 2B

	Thousand Acre Feet												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Seasonal	-	-	-	-	-	-	-	-	-	-	-	-	0.0
Semi-Perm.	-	-	-	-	-	-	-	-	-	-	-	-	0.0
Permanent	-	-	-	-	-	-	-	-	-	-	-	-	0.0
Total	-	-	-	-	-	-	-	-	-	-	-	-	0.0

**Step 4. Area Affected By Targeted Benefit**

This analysis assumes that all of the agricultural lands in the sub-region could potentially contribute to the provision of additional waters for wetlands.

**Step 5. Water Flow Path Elements**

A. Rain Sub-Region (inflow)

source: CVGSM Sub-Region 9

	Flow Path Not Affected Thousand Acre Feet												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	71.9	60.2	36.7	21.0	22.2	8.5	0.8	4.8	10.9	31.1	42.4	61.0	371.4
2) Dry	81.8	83.1	74.7	36.3	15.9	4.3	0.9	4.5	16.8	25.2	59.7	82.9	486.2
3) B Norm	91.6	105.9	73.2	45.4	11.9	3.1	3.1	5.7	15.8	31.4	66.7	85.6	539.6
4) A Norm	141.7	131.6	93.3	40.0	19.4	1.6	3.6	4.0	10.9	40.8	75.9	90.4	653.2
5) Wet	136.9	106.1	109.9	75.8	12.1	5.5	3.3	6.9	14.9	47.8	106.6	147.2	772.9
Wtd Avg.	107.1	98.0	82.6	48.7	15.2	4.6	2.4	5.5	14.5	36.1	75.2	101.2	591.1

B. Surface Water Diversions Sub-Region (inflow)

source: CVGSM Sub-Region 9

	Flow Path Not Affected Thousand Acre Feet												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	0.6	8.4	57.4	131.1	163.6	221.0	267.6	195.3	135.0	102.8	44.7	41.5	1,368.9
2) Dry	0.6	2.3	21.9	104.2	173.4	236.8	278.2	205.3	135.0	112.4	39.5	35.8	1,345.4
3) B Norm	0.6	3.9	28.3	96.6	177.3	240.1	280.9	206.1	134.4	108.5	39.6	30.5	1,346.8
4) A Norm	0.6	0.8	9.7	92.3	165.9	244.4	282.5	210.3	142.4	91.5	34.7	21.1	1,296.3
5) Wet	0.6	3.8	14.8	56.4	169.5	242.6	284.1	210.2	139.1	95.9	27.2	9.3	1,253.6
Wtd Avg.	0.6	3.7	24.1	90.1	170.8	238.2	279.7	206.3	137.1	102.6	35.8	25.5	1,314.4

C. Import Sub-Region (inflow)

source: CVGSM Sub-Region 9

	Thousand Acre Feet												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	0.2	1.2	1.6	3.1	3.9	4.6	5.0	4.7	3.3	5.4	2.4	0.6	36.1
2) Dry	0.2	1.1	2.0	5.1	6.6	7.9	9.0	8.3	5.2	5.8	2.5	0.6	54.2
3) B Norm	0.2	1.2	2.2	5.8	7.4	9.0	10.4	9.5	5.7	6.2	2.7	0.6	60.8
4) A Norm	0.2	0.9	2.0	6.1	7.8	9.5	11.0	10.1	6.0	5.9	2.6	0.6	62.5
5) Wet	0.2	1.3	2.1	6.0	7.9	9.7	11.3	10.3	6.1	6.3	2.7	0.6	64.6
Wtd Avg.	0.2	1.1	2.0	5.4	7.0	8.5	9.7	8.9	5.4	6.0	2.6	0.6	57.4

D. Groundwater Pumping Sub-Region (inflow)

source: CVGSM Sub-Region 9

	Thousand Acre Feet												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	1.3	2.1	3.6	5.6	7.7	43.7	38.9	24.1	6.0	23.5	2.8	2.8	162.1
2) Dry	1.2	1.8	3.2	5.5	7.7	43.8	38.9	24.1	6.0	25.0	2.8	2.8	163.0
3) B Norm	1.2	1.9	3.4	5.5	7.7	43.8	38.9	24.2	6.0	24.0	2.8	2.8	162.2
4) A Norm	1.3	1.4	2.9	5.5	7.7	43.8	38.9	24.2	6.1	22.2	2.8	2.7	159.4
5) Wet	1.2	1.9	3.1	5.3	7.7	43.8	38.9	24.2	6.0	22.1	2.8	2.5	159.6
Wtd Avg.	1.2	1.8	3.2	5.5	7.7	43.8	38.9	24.2	6.0	23.3	2.8	2.7	161.2

E. ET Rain Sub-Region (outflow, irrecoverable)

source: CVGSM Sub-Region 9

	Flow Path Not Affected Thousand Acre Feet												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	18.2	31.1	23.8	18.2	26.2	2.4	-3.6	6.1	2.0	18.6	21.4	14.1	178.4
2) Dry	18.2	34.1	42.9	28.6	19.5	-4.8	-4.8	5.2	4.3	15.7	23.4	14.3	196.7
3) B Norm	18.2	33.5	38.2	34.0	18.4	-6.5	-1.6	6.7	4.4	18.9	26.7	14.5	205.5
4) A Norm	18.2	36.3	50.5	33.9	23.8	-9.3	-4.4	4.8	2.8	21.8	26.2	14.1	218.8
5) Wet	18.2	32.5	47.8	59.5	21.1	-11.1	-6.1	6.1	2.2	27.9	29.9	14.5	242.6
Wtd Avg.	18.2	33.4	41.9	38.4	21.2	-6.7	-4.3	5.8	3.2	21.2	26.2	14.4	212.9

F. Runoff from Rain Sub-Region (outflow, irrecoverable)

source: CVGSM Sub-Region 9

	Flow Path Not Affected Thousand Acre Feet												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	33.5	25.0	12.9	6.5	6.9	1.2	0.0	0.8	2.4	10.1	17.8	31.5	148.6
2) Dry	40.0	41.8	34.7	14.3	3.4	0.2	0.0	0.5	5.0	8.2	27.5	46.6	222.1
3) B Norm	47.8	58.1	35.3	18.7	2.9	0.0	0.3	0.8	4.4	10.1	30.9	47.0	256.2
4) A Norm	82.0	73.9	46.4	13.7	4.8	0.0	0.4	0.4	2.0	14.5	37.5	47.6	323.4
5) Wet	79.6	58.8	59.7	34.6	2.1	0.2	0.3	1.2	3.8	19.0	57.6	87.9	404.9
Wtd Avg.	58.2	52.3	41.1	20.3	3.5	0.3	0.2	0.8	3.8	13.0	37.4	57.4	288.2

G. ETAW Sub-Region (outflow, irrecoverable)

source: CVGSM Sub-Region 9

	Flow Path Not Affected Thousand Acre Feet												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	0.0	5.2	37.9	83.6	119.1	182.9	214.4	153.8	92.4	50.5	11.3	0.4	951.5
2) Dry	0.0	2.3	18.8	73.1	125.8	190.1	215.5	154.6	90.2	53.4	9.3	0.2	933.3
3) B Norm	0.0	2.9	23.6	67.7	126.9	191.8	212.3	153.1	90.1	50.1	6.0	0.0	924.4
4) A Norm	0.0	0.0	11.3	67.8	121.5	194.6	215.2	155.0	91.6	47.2	6.5	0.4	911.2
5) Wet	0.0	3.8	14.0	42.2	124.2	196.4	216.8	153.8	92.2	41.2	2.8	0.0	887.4
Wtd Avg.	0.0	2.9	19.9	63.3	124.1	192.0	215.1	154.0	91.3	47.8	6.5	0.2	917.0

H. Export Sub-Region (outflow, irrecoverable)

source: CVGSM Sub-Region 9

	Thousand Acre Feet												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	1.4	1.5	6.6	35.2	39.2	52.8	58.6	47.6	24.6	11.7	1.9	2.4	283.6
2) Dry	1.4	1.3	3.1	31.5	47.9	66.1	73.0	58.2	27.6	13.8	2.0	2.4	328.2
3) B Norm	1.4	1.3	3.9	29.1	51.2	69.6	77.2	62.0	28.9	13.7	1.8	2.4	342.5
4) A Norm	1.5	1.4	1.5	28.2	49.3	72.5	78.4	63.3	30.5	9.4	2.3	2.5	340.6
5) Wet	1.4	1.3	2.2	21.1	51.7	72.6	80.4	64.7	31.0	11.1	1.4	2.4	341.1
Average	1.4	1.3	3.2	27.9	48.8	67.9	74.9	60.2	28.9	12.1	1.8	2.4	330.8

I. Surface Runoff Sub-Region (outflow, recoverable)

source: CVGSM Sub-Region 9

	Thousand Acre Feet												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	0.0	0.0	2.8	3.6	4.0	8.9	11.7	3.6	5.7	27.0	3.6	9.7	80.7
2) Dry	0.0	0.0	0.5	3.0	3.6	7.5	10.4	4.3	6.4	34.7	3.4	5.7	79.5
3) B Norm	0.0	0.0	1.0	2.9	3.6	7.5	11.7	3.6	5.7	30.9	2.3	6.0	75.3
4) A Norm	0.0	0.0	0.0	3.2	3.6	7.3	10.1	4.8	8.1	18.2	2.4	4.8	62.6
5) Wet	0.0	0.0	0.2	1.4	3.6	7.3	8.5	4.3	5.7	23.7	1.7	0.3	56.7
Average	0.0	0.0	0.7	2.6	3.7	7.6	10.2	4.2	6.2	27.4	2.6	4.5	69.7

J. Percolation to Groundwater Sub-Region (outflow, recoverable)

source: CVGSM Sub-Region 9

	Thousand Acre Feet												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	21.0	9.3	14.5	16.6	10.9	23.4	25.0	15.7	21.0	42.8	36.7	47.2	284.2
2) Dry	22.9	12.3	5.0	7.3	8.4	22.9	25.2	17.0	21.3	41.3	38.2	51.1	273.0
3) B Norm	25.4	19.2	7.5	8.3	8.0	21.5	26.5	17.4	21.0	43.9	42.3	50.1	291.2
4) A Norm	40.4	23.8	4.0	4.8	4.4	22.2	27.0	17.8	23.0	42.8	39.6	44.4	294.3
5) Wet	39.3	19.0	7.8	2.9	3.6	19.0	26.1	18.5	22.0	47.6	44.8	54.2	304.9
Average	30.4	16.9	7.5	7.1	6.7	21.4	26.0	17.5	21.6	44.1	41.0	50.4	290.6

K. Evaporation Flows Sub-Region

source: = 0.02 \* (Step 5B + 5C - 5H)

= 0.02 \* (Surface Water Diversion + Import - Export)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	0.0	0.2	1.0	2.0	2.6	3.5	4.3	3.0	2.3	1.9	0.9	0.8	22.4
2) Dry	0.0	0.0	0.4	1.6	2.6	3.6	4.3	3.1	2.3	2.1	0.8	0.7	21.4
3) B Norm	0.0	0.1	0.5	1.5	2.7	3.6	4.3	3.1	2.2	2.0	0.8	0.6	21.3
4) A Norm	0.0	0.0	0.2	1.4	2.5	3.6	4.3	3.1	2.4	1.8	0.7	0.4	20.4
5) Wet	0.0	0.1	0.3	0.8	2.5	3.6	4.3	3.1	2.3	1.8	0.6	0.1	19.5
Wtd Avg.	0.0	0.1	0.5	1.4	2.6	3.6	4.3	3.1	2.3	1.9	0.7	0.5	20.8

L. Sub-Region Water Balance

source: = Step 5.(A + B + C + D) - Step5. (E + F + G + H + I + J + K)

= (Rain + Surface Water Diversions + Import + Groundwater Pumping) - (ET Rain +  
Runoff from Rain + ETAW + Export + Surface & Groundwater Return + Evaporation)

	Thousand Acre Feet												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	-0.1	-0.5	-0.4	-4.8	-11.5	2.8	1.9	-1.8	4.8	0.2	-1.3	-0.2	-11.0
2) Dry	1.3	-3.5	-3.6	-8.1	-7.7	7.2	3.4	-0.7	6.0	-0.9	0.0	1.2	-5.4
3) B Norm	0.9	-2.2	-3.0	-8.9	-9.4	8.5	2.7	-1.2	5.2	0.4	0.9	-0.9	-6.9
4) A Norm	1.8	-0.8	-6.1	-9.3	-9.3	8.5	5.2	-0.8	4.9	4.7	0.8	0.5	0.2
5) Wet	0.4	-2.5	-2.0	-19.0	-11.6	13.8	7.3	-0.1	6.9	-0.1	0.5	0.1	-6.4
Wtd Avg.	0.8	-2.2	-2.9	-11.3	-9.9	9.0	4.5	-0.8	5.8	0.5	0.3	0.2	-6.0

M. Applied Water Ratio Sub-Region

source: = Step 5G / Step 5 (B + C + D - H)

= ETAW/(Surface Water Diversions + Import + Groundwater Pumping - Export)

	Thousand Acre Feet												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	0.00	0.52	0.68	0.80	0.88	0.84	0.85	0.87	0.77	0.42	0.24	0.01	0.74
2) Dry	0.00	0.59	0.78	0.88	0.90	0.85	0.85	0.86	0.76	0.41	0.22	0.01	0.76
3) B Norm	0.00	0.50	0.79	0.86	0.90	0.86	0.84	0.86	0.77	0.40	0.14	0.00	0.75
4) A Norm	0.00	0.00	0.86	0.90	0.92	0.86	0.85	0.86	0.74	0.43	0.17	0.02	0.77
5) Wet	0.00	0.67	0.79	0.90	0.93	0.88	0.85	0.85	0.77	0.36	0.09	0.00	0.78
Wtd Avg.	0.0	0.5	0.8	0.9	0.9	0.9	0.8	0.9	0.8	0.4	0.2	0.0	0.8

N. Groundwater Check Sub-Region

source: = Step 5 (J - D)

= Groundwater Return Flows - Groundwater Pumping

	Thousand Acre Feet												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	19.7	7.2	11.0	11.0	3.2	-20.3	-13.8	-8.4	15.0	19.3	33.9	44.4	122.1
2) Dry	21.7	10.5	1.8	1.7	0.7	-20.9	-13.7	-7.1	15.3	16.4	35.3	48.3	110.0
3) B Norm	24.2	17.3	4.2	2.8	0.3	-22.3	-12.5	-6.8	15.0	19.9	39.5	47.3	128.9
4) A Norm	39.1	22.4	1.1	-0.6	-3.3	-21.6	-11.9	-6.4	17.0	20.6	36.8	41.7	134.9
5) Wet	38.0	17.1	4.7	-2.4	-4.1	-24.8	-12.8	-5.7	15.9	25.5	42.0	51.7	145.3
Wtd Avg.	29.2	15.0	4.3	1.6	-1.0	-22.4	-13.0	-6.7	15.6	20.8	38.2	47.8	129.4

**6. Idealized Agricultural Potential**

A. Export Adjustment

0% of Export (Step 5H.) water is available for flow/timing changes in Sub-Region

note: Import (Step 5C) and Export (Step 5H) are in the water balance. In this Step (7D) Export water is considered water that flows through districts in Sub-Regions 4, 5, and 7. This water is available to make flow/timing changes

source: CVGSM Sub-Region

	Thousand Acre Feet												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	---	---	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	---	---	0.0
2) Dry	---	---	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	---	---	0.0
3) B Norm	---	---	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	---	---	0.0
4) A Norm	---	---	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	---	---	0.0
5) Wet	---	---	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	---	---	0.0
Wtd Avg.	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	N/A	N/A	0.0

B. Idealized Agricultural Potential

source: = Step 5 ((B + C + D) + Step 6A. - Step 5 (G + H))

= Surface Water Diversions + Import + Groundwater Diversions) - (ETAW + Export + Export Adjustment)

	Thousand Acre Feet												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	---	---	18.0	21.0	16.9	33.7	38.5	22.7	27.3	69.5	---	---	247.5
2) Dry	---	---	5.2	10.3	14.0	32.3	37.6	24.9	28.5	75.9	---	---	228.7
3) B Norm	---	---	6.3	11.0	14.3	31.5	40.8	24.7	27.2	74.8	---	---	230.6
4) A Norm	---	---	1.8	7.9	10.6	30.7	39.0	26.2	32.3	63.0	---	---	211.4
5) Wet	---	---	3.8	4.4	9.3	27.3	37.2	26.2	28.0	72.1	---	---	208.3
Wtd Avg.	N/A	N/A	6.2	9.7	12.6	30.6	38.4	25.1	28.4	72.0	N/A	N/A	223.1

**7. Achievable Agricultural Potential**

A. Farm Demand

assumes farm loss fraction of 0.13 for Sub-Region , values vary by SubRegion

source: = ETAW / Farm High (1- loss fraction)

	Thousand Acre Feet												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	---	---	43.6	96.1	136.9	210.2	246.4	176.8	106.3	58.0	---	---	1,074.2
2) Dry	---	---	21.7	84.0	144.6	218.5	247.7	177.8	103.6	61.3	---	---	1,059.2
3) B Norm	---	---	27.1	77.9	145.9	220.4	244.0	176.0	103.5	57.6	---	---	1,052.4
4) A Norm	---	---	13.0	78.0	139.7	223.7	247.3	178.2	105.3	54.3	---	---	1,039.4
5) Wet	---	---	16.1	48.5	142.8	225.7	249.2	176.8	106.0	47.3	---	---	1,012.4
Wtd Avg.	---	---	22.8	72.8	142.7	220.7	247.2	177.0	104.9	55.0	---	---	1,043.0

B. Groundwater Pumping after System Improvements

Existing Farm Efficiency for Sub-Region = 0.70  
 source: = (1 - 0.7 \* (1/0.7-1/(1-Farm Loss Fraction))) \* Groundwater Pumping

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	---	---	2.9	4.5	6.2	35.2	31.3	19.4	4.9	18.9	---	---	123.1
2) Dry	---	---	2.6	4.4	6.2	35.2	31.3	19.4	4.9	20.1	---	---	124.2
3) B Norm	---	---	2.7	4.4	6.2	35.3	31.3	19.4	4.9	19.3	---	---	123.5
4) A Norm	---	---	2.3	4.4	6.2	35.3	31.3	19.4	4.9	17.9	---	---	121.7
5) Wet	---	---	2.5	4.3	6.2	35.3	31.3	19.4	4.9	17.8	---	---	121.7
Wtd Avg.	---	---	2.6	4.4	6.2	35.2	31.3	19.4	4.9	18.8	---	---	122.8

C. Farm Demand not met by Groundwater Pumping

source: = Step 7.A - Step 7.B  
 = Farm Demand - Groundwater Pumping

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	---	---	40.8	91.6	130.7	175.0	215.1	157.4	101.4	39.1	---	---	951.1
2) Dry	---	---	19.1	79.6	138.4	183.2	216.4	158.3	98.8	41.2	---	---	935.0
3) B Norm	---	---	24.4	73.4	139.7	185.2	212.7	156.6	98.7	38.3	---	---	928.9
4) A Norm	---	---	10.7	73.5	133.5	188.4	216.0	158.7	100.5	36.4	---	---	917.7
5) Wet	---	---	13.6	44.2	136.6	190.4	217.9	157.3	101.1	29.5	---	---	890.8
Wtd Avg.	---	---	20.2	68.4	136.5	185.4	215.9	157.6	100.0	36.2	---	---	920.2

D. Water Supplier Delivery to Meet Farm Demand

assumes district loss fraction of 0.08  
 source: = Step 7C / District High (1- loss fraction)  
 = Farm Demand not met by Groundwater Pumping/(1 - 0.08)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	---	---	44.3	99.5	142.1	190.2	233.8	171.1	110.2	42.5	---	---	1,033.8
2) Dry	---	---	20.7	86.5	150.4	199.2	235.2	172.1	107.4	44.8	---	---	1,016.3
3) B Norm	---	---	26.6	79.8	151.8	201.3	231.2	170.2	107.2	41.6	---	---	1,009.7
4) A Norm	---	---	11.6	79.9	145.1	204.8	234.8	172.5	109.2	39.6	---	---	997.5
5) Wet	---	---	14.8	48.1	148.5	207.0	236.8	171.0	109.9	32.1	---	---	968.2
Wtd Avg.	---	---	22.0	74.3	148.3	201.6	234.6	171.3	108.7	39.3	---	---	1,000.2

E. Achievable Agricultural Potential

source = Step 5.(B + C - H) + Step 6A - Step 7D.  
 = Surface Water Diversions + Import - Export + Export Adjustment - Water Supplier  
 Delivery to Meet Farm Demand

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	---	---	8.1	0.0	0.0	0.0	0.0	0.0	3.4	54.0	---	---	65.5
2) Dry	---	---	0.1	0.0	0.0	0.0	0.0	0.0	5.3	59.5	---	---	64.9
3) B Norm	---	---	0.0	0.0	0.0	0.0	0.0	0.0	4.0	59.3	---	---	63.3
4) A Norm	---	---	0.0	0.0	0.0	0.0	0.0	0.0	8.7	48.4	---	---	57.1
5) Wet	---	---	0.0	0.0	0.0	0.0	0.0	0.0	4.3	59.1	---	---	63.3
Wtd Avg.	---	---	1.1	0.0	0.0	0.0	0.0	0.0	4.9	57.2	---	---	63.2

F. Groundwater Check after System Improvements

$$\text{source} = (0.13 * 0.80 * \text{ETAW}) + (0.04 * (\text{Farm Demand w/o Groundwater} - \text{Water Supplier Delivery})) - \text{Groundwater Pumping}$$

	Thousand Acre Feet												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1) Critical	---	---	0.3	2.8	4.2	-25.3	-17.3	-8.6	3.2	-18.4	---	---	-59.1
2) Dry	---	---	-1.3	1.8	4.9	-24.7	-17.3	-8.6	3.0	-19.6	---	---	-61.8
3) B Norm	---	---	-1.0	1.3	5.0	-24.5	-17.6	-8.8	3.0	-18.9	---	---	-61.5
4) A Norm	---	---	-1.7	1.3	4.5	-24.3	-17.3	-8.6	3.1	-17.4	---	---	-60.4
5) Wet	---	---	-1.7	-1.1	4.7	-24.1	-17.2	-8.7	3.2	-17.9	---	---	-62.7
Wtd Avg.	---	---	-1.2	0.9	4.7	-24.5	-17.3	-8.7	3.1	-18.5	---	---	-61.5

**8. Quantifiable Objective**

---

$$\text{source} = \min(\text{Step 3A Wtd Avg, Step 7E})$$

	Thousand Acre Feet												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Wtd Avg	---	---	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	---	---	0.0